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ABSTRACT

This report represents the second phase of an ongoing longitudinal study of children in different child-rearing environments in Sweden: children's own homes, "day" homes and day care centers. One hundred and two of the 120 original families participated in the follow-up. The children had reached an age of 5 1/2 years. Four areas investigated were: evolution of home settings over the four-year period of the study, children's interactions with adults and peers in day care centers and homes, the influence of adult- and peer-imposed norms on children, and overall development of the children. Interviews, observations and outcome measures were used. Although the two groups of families who entered the study when their children were one year old were carefully matched for maximum comparability, after four years children in center care were (1) more likely to have only one parent in the home, (2) have no brothers or sisters, (3) live in apartments, and (4) be girls. Peer interaction was more frequently observed than adult interaction in both the homes and the centers. Boys were more peer group-oriented. Differences in overall development were to a large extent sex-related, rather than setting-related. It was concluded that: neither the home nor the day care center was superior or inferior to the other in promoting the overall development of the children. There are substantial differences between boys and girls in social interaction patterns, activities, and cognitive performances. Sex differences are more pronounced than differences found between different child care environments. (Author/RH)

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Lars Gunnarsson

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A Follow-up

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CHILDREN IN DAY CARE AND FAMILY CARE IN SWEDEN: A FOLLOW-UP

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This report represents the second phase of an ongoing longitudinal study of children in different child-rearing environments in Sweden.

One hundred and two of the 120 original families participated in the follow-up. The children had reached an age of 5 1/2 years. Four areas were investigated: First, the ways that the home settings of all the families had evolved over the four-year period. Second, descriptions and comparisons of the children's interactions with adults and peers in the day care centers and in the homes. Third, the relative influence that adult and peer imposed norms might have on the children and, fourth, the overall development of the center-based and home-based children were measured.

Interviews were conducted with parents about changes in family characteristics, child-rearing attitudes, daily routines and the social network of the child. Observations in the natural settings provided data on social interaction patterns. Outcome measures included the use of doll play dilemmas and the administration of a test of overall mental development.

Data from interviews indicated that family characteristics had changed systematically during the four-year period between the first and the second phase of the study. When the follow-up began, children in center care were more likely than home children to have only one parent in the home. They were also more likely not to have brothers and sisters, and more likely to live in apartments than the home children who often had moved with their parents to suburban private homes. The observational data showed that five-year old children interacted more with peers than with adults both in the homes and in the centers. There were some differences in social interaction patterns. Boys in the center interacted much more with their peer-group and less with adults than boys at home or girls in either of the settings.

Differences in overall development, measured by Griffiths Mental Development Scale, were to a large extent sex-related, rather than setting-related. The girls performed better than the boys both overall and on most of the subscales regardless of setting. Our prediction that center children would be more influenced by peer demands than home children, while the reverse would be true with adult demands, was not supported. Analyses of the responses to several doll play situations did not show any significant differences between the two groups of children.

It was concluded that: neither the home or the day care center, was superior or inferior to the other in promoting the overall development of the children. There are substantial differences between boys and girls in social interaction patterns, activities, and cognitive performances. Sex differences are more pronounced than differences found between different child care environments.

Findings are discussed in relation to the physical and social design of the environments, different sex-role related adult expectancies for boys and girls, and the absence of male caregivers in both home and center settings.

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F _ Ö _ R _ Ö _ R _ D

Den här rapporten utgör slutdokumentation av andra fasen av den longitudinella studie av barn i olika upp-
växtmiljöer som inleddes 1970 av den amerikanske forskaren
Moncrieff Cochran och som då döptes till "The Swedish Child-
rearing Project"(SCP). Sedan svenska anslagsgivare (Social-
styrelsen) under fas två tagit över delar av finansieringen
har projektet även fått ett svenskt namn "Daghemmet och Hemmet".
Projektet är f.n. inne i sin tredje fas, vilken beräknas pågå
fram till utgången av budgetåret 1980/81.

Anledningen till att föreliggande rapport författats på
engelska är dels den direkta knytning till USA (genom
projektledare Cochran) som projektet haft sedan starten och
det intresse kring daghemsforskning som finns där, vilket
tagit sig till uttryck i att bl.a. Foundation for Child
Development satsat pengar i projektet, och dels att rapporten
(med något annorlunda utseende) använts som en del i upp-
fyllandet av kraven för min doktorsexamen vid University of
Michigan, USA.

I samband med detta vill jag här passa på att tacka de
olika personer här i Göteborg som på ett eller annat sätt
hjälpt mig att genomföra den här uppföljningsstudien: De
deltagande familjerna och personalen vid de olika daghemmen
förtjänar att stå först i den raden. Socialstyrelsen har på
ett förtjänstfullt sätt bidragit till de ekonomiska förut-
sättningarna. Socialförvaltningen i Göteborg har öppnat
dörrarna och berett oss tillträde till ett 30-tal av Göteborgs
daghem. Ett speciellt tack till Lennart Rydén, Eva Ljungqvist
och Kristina Nordenborg, som tillsammans med mig svarat för
datainsamlingen med ett intresse och engagemang som gjort
datainsamlingsperioden till ett stimulerande äventyr.
Karl-Gustav Stukåt har under flera år givit projektet sitt
stöd såväl på det praktiska som det toeretiska planet.
Anders Hill har dragit igång många kreativa diskussioner kring
projekt-relaterade frågeställningar och har dessutom hjälpt
mig med databearbetning och analys. Gunni Kärrby delade med
sig av sina erfarenheter kring användandet av docklekstest och
förtjänar ett tack, liksom även Jan-Gunnar Tingsell för hjälp
med datamaskinsprogrammering och Marion Wesslander för
utskrifter av tidigare manusversioner.

En förteckning över projektrelaterade rapporter, artiklar
och uppsatser återfinnes i slutet av denna rapport.

Lars Gunnarsson

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CHAPTER I

INTRODUCTION

This thesis represents the second phase of an ongoing longitudinal study of children in different child-rearing environments in Sweden. The study is not "experimental" in the traditional sense but rather an "experiment of nature" involving three child-rearing conditions that developed naturally from the situations in which 120 families were found in 1970. The study has been referred to by Bronfenbrenner (1974a) as one "the parameters of which approximate the properties of an ecological model" (pg. 9), and is used by Cochran (1975) as "an example of the ecological approach to the study of human development".

The Swedish Childrearing Study - A longitudinal perspective

The first phase of the study was conducted in 1970-71, when the subject children were between 12 and 18 months old, and is reported in detail by Cochran (1973, 1977a). The second phase is the first follow-up of the children and their families, four years later. Other follow-up visits are planned as phases three, four and five. To provide the reader with the necessary background information, and because the activities in this first follow-up have been influenced in part by the results of the initial baseline phase, a summary of the phase one design and major findings follows.

PHASE ONE

The research was conducted in Gothenburg, Sweden, an industrial port city with a population of about 600,000. One hundred and twenty families participated in the first phase and each family contained a child, 12-18 months old, who was the prime target of study. A cross-sectional design was used. Children were observed and tested either at twelve, fifteen or eighteen months of age. Half of the children spent their day in an all-day group care center during the working week and the other half were cared for in a home setting, either by the mother or a "day mother". All the families were visited in their homes and the children were observed and tested in the homes or in the day care center. The distribution of children across settings is shown below.

Table 1

Distribution of children across settings - phase one.

HOME SETTINGS		GROUP CARE SETTING
Own Home	"Day Home" ^a	Day Care Center
34 children	26 children	60 children

^a The 26 children in the "Day Home" group can be divided into two groups. Sixteen children were taken care of in the homes of a private (non-licensed) "day mother". The maximum number of children in these "day homes" were four. The remaining 10 children in the "Day Home" group in Table 1 were cared for in their own homes by an aunt, a grandmother or a "practicing caregiver" (practicant) and were usually the only child in the setting.

Matching of groups - The children in group care and in family care were carefully matched with each other on the following variables: age,

sex, number of parents, number of siblings, socio-economical level of the family, and geographical location of the homes. A good match was obtained on all these variables except one, "number of parents". Twenty-eight percent of the group care children were being raised by a single adult (always the mother) while this was true for only 11% of the home children. To control for possible parental differences in attitudes toward the day care center as a viable child-rearing alternative, the "home children" were selected from the waiting lists of those same twelve day care centers in Gothenburg where the "center children" spent their days.

Purpose and Measurements - The main purpose of phase one was to describe systematically, and compare the experiences young children were having in, three child care settings in order to better understand effects of the human environment on those experiences. Particular interest was paid to interactions between children and adults. Two different observation instruments were used to describe these processes; one, the Quantitative Analysis Scale, described the child's entire stream of behavior, while the other, the Caregiver - Child Interaction Scale, concentrated on the interactions between the child and the adults in his/her immediate surroundings. Settings were also carefully described in terms of physical design, daily routines, etc. to clarify the framework within which the children were having their different experiences.

A secondary purpose was to examine possible developmental differences exhibited by children in the three environments. An infant scale (Griffiths, 1970) and an attachment exercise were used to measure early developmental outcomes.

Phase one results - The findings of phase one revealed that many experiences were common to children in both home and center settings. Most of the similar experiences resulted from the children's need to practice walking, running and climbing, or the basic care activities routinely performed by caregivers in both settings (diaper changing, feeding, dressing and undressing, etc.). But there were some differences, along with differences in the physical design of environments, the number of roles performed by the caregivers differed to a large extent. The caregivers in the centers had one main function, to work with the children, while mothers and day mothers were doing things like cleaning, washing and shopping, in addition to taking care of the child. The ecological set-up of the "day home" is usually very similar to that of the "biological" home, both being home-settings not specifically designed for children but, rather, for the family as a whole.

Interaction between adult and child occurred with considerably greater frequency and duration in the homes and day homes than in the centers. Children in the centers were found to interact with their caregiver only about half as much as did the children in the other two settings. These differences between the home and the center environments were significant in three of the twelve developmental concerns, namely, cognitive-verbal activities (such as telling stories, labelling objects, etc.), play, and exploration of the physical environment.¹ These three kinds of interactions were also the most frequent ones in all three environments.

¹ The twelve developmental concerns, distinguished to describe the content of the child's behavior during the interaction with the adult, were Cognitive Verbal, Cognitive Perceptual, Social Positive, Social Negative, Basic Care, Exploration - Physical Environment, Exploration - Toys, Imagination, Affection, Practical Household skills, Gross Motor Activity and Purposelessness.

Differences in socialization practices involved frequency and focus of negative sanctioning or restricting by responsible adults. Discouraging techniques ("don'ts", "negative reinforcements", "distraction") represented only 7% of all techniques used by the center caregivers as compared to 11% for the day mothers and 11% for the "biological" mothers (Cochran, 1973, pp. 92-93). These techniques were often used when the children in the home setting were exploring things not available to children in the centers (i.e., glass vases, ashtrays, etc.).

Home and center children performed equally well on the Griffiths Mental Developmental Scale (Full scale mean scores: Center groups: 112.8; Home groups: 113.8; Swedish age norm: 106.1), and no differences were found in responses to the "attachment exercise" conducted in each child's home.

In discussing the descriptive findings Cochran (1977a) emphasizes the different roles performed by adults in the center and family setting:

"One hypothesis to explain the greater amount of exploration observed in the homes would stress the relationship between the tendency of the child to explore and the presence or absence of the mother. This relationship has been demonstrated by Ainsworth and Bell (1970) and is discussed by them in relation to attachment and separation. An alternative hypothesis, which is consistent with the absence of 'own home' - day home differences, (Gunnarsson, 1973) is based on the different roles performed by adults in the home and center settings. This hypothesis can be stated as follows: One year old children being reared in homes explore more because adults are performing more roles at home and so homes present greater opportunity for exploration than do centers. The home must function as living quarters for parents as well as child, and as a place to receive friends and relatives, while the center is designed exclusively for child care. The several adult roles being carried on in the house (parent, husband, wife, friend) demand a particular design of the physical environment, and so present a variety of non-social and social opportunities for child exploration, some of them "off limits" (flowers, detergent, back stairs, cat). In contrast, the center need support only one role, child care, and so included many play opportunities

and relatively few unsanctioned opportunities for exploration..
 The differences in frequency of exploring interactions is also interesting in light of the restricting and directing techniques employed by the adult caregivers in that context. The pattern which emerges is one where the child in either type of home setting is being constantly reminded of the saliency of the adult, while the center child's attention is drawn via similar restricting and directing techniques to the importance of appropriate peer relations." (pp. 9-10)

This dissertation reports the second phase of this longitudinal study and the first follow-up of the children. Some of the predictions to be tested in phase two are derived from the findings in the baseline study described above and some are new and governed by a slightly different phase two focus. While this focus continues to be on childrearing patterns characterized by varying amount of extra-parental child-caring support, phase two is conducted with a greater appreciation than before of the fact that the day care arrangement used by a family is not an independent force operating on the child, but is rather just "one of an interrelated constellation of environmental factors affecting the child's development". (Cochran, 1975). It is important to try to understand the relationship between family characteristics and choice of child care setting, and to better understand the ways in which the day care center operates as a family support in combination with, rather than independent of other family characteristics.

Before we proceed with a description of the phase two design, measurements, emphasis, and predictions, (Chapter 3), we shall devote Chapter two to a review of existing day care research and a description of the Swedish child care system.

CHAPTER TWO

RESEARCH PERSPECTIVES

This chapter is divided into two parts. In part one we shall examine existing day care research in the light of its limitations, and present some of the major findings, paying specific attention to studies relevant to this study.

Part two contains a description of the Swedish child care system and some of its explicit goals.

Previous Research on Group Care

Early research focusing on collective child-rearing forms, usually had as its vantage point the issue of whether care outside of the home disturbed the infant's emotional development (Goldfarb, 1943; Spitz, 1945). Bowlby's (1951) studies of institutionalized children received a great deal of attention, and several studies followed which tried to answer the question of whether arrangements where the child was deprived of continuous access to the mother affected negatively the development of strong maternal attachment. This attachment was believed to be a prerequisite for emotional security, and therefore, strongly related to the overall development of the child (Dennis, 1960; Dennis and Najarian, 1957; Skeels and Dye, 1939). However, the "institutional settings" in which the infants participating in these studies were

brought up share little or no resemblance with today's group care settings. The physical environments were grossly inadequate and the children received only a minimal amount of attention from caregiving adults. The "maternal deprivation" studies, therefore, deserve mentioning only because they first raised issues around child care outside of the home and its relation to child development, and because they have continued to affect more recent studies of mother-child attachment.

Recent Day Care Research

Research on day care has increased substantially over the past ten years. At least in the modern western societies, more and more mothers have entered the labor force, and so the demands for substitute care of the children outside of the home have increased. In the U.S. one-third of the mothers with children under six are working (Bronfenbrenner, 1977) and in Sweden the corresponding figure was 60% in 1975 (SOU, 1975).

Available day care research has focused on that particular function of day care which is related to the child's development in the emotional, social, and intellectual domains.¹ Although quite numerous, most day care studies are seriously limited both by the kinds of questions they ask and by the methods they employ. Five such limitations require consideration:

1. Restriction to high-quality day care centers.

Recent studies have compared children in full-day center programs with groups of children raised at home (i.e., Kagan,

¹ This is a fundamental weakness in the research approach to day care, since the economic and societal functions of the day care systems need to be understood along with the "educational" functions.

Kearsly and Zelazo, 1977; Riccuiti and Poresky, 1973; Robinson and Robinson, 1971; Schwartz et al, 1974). Most frequently, however, the day care centers thus studied have been small, affiliated with universities, generously funded, and designed and evaluated by sophisticated child development psychologists who have attempted to provide group-care environments optimal for child development (cf. Clarke-Stewart, 1977). Most day care available to parents is not of this character.

2. Restriction to short term, immediate effects.¹

Existing studies have been primarily interested in short term, immediate effects rather than more long range impacts on child development and family functioning. With one exception (Moore, 1975) there are no longitudinal studies of children exposed to home vs day care beyond the pre-school years.

3. Restriction to developmental outcomes.

Most researchers studying children in day care have been interested only in the developmental outcomes of the day care experiences, paying less or no attention to the experience itself. This exclusion of processes leaves us with no answer to the question: What was it in the experience that caused this difference (if any) in behavior?

¹ Excluded from this review as going beyond the scope of day care in terms of purpose and practicality are experimental programs specially designed to provide cognitive enrichment for preschool children particularly from low income families. For a comprehensive evaluation of such programs, see Bronfenbrenner (1974a).

4. Comparability of samples.

The fact that families using day care might differ in some important respects from families rearing their children at home (attitudes toward day care, attitudes toward the maternal role) has been recognized only recently (Hock, 1976; Sibbisson, 1973). It is important to try to control for these differences between users and non-users of day care since there is ample research evidence that parental attitudes and values influence child rearing. Many day care studies have selected comparison groups without regard for these potential differences, and so their findings are compromised by potentially confounding factors.

5. Reliance upon laboratory methods.

A fifth limitation of most day care research has been its reliance upon laboratory measures for measuring developmental outcomes in children. The generalizability of the results obtained this way to behavior in real-life situations of home, neighborhood, pre-school, and school have been seriously questioned by many researchers (Bronfenbrenner, in press; Lewis, 1973; Riegel, 1975; Sroufe, 1970; Tulkin, 1972).

The argument that much of contemporary developmental psychology can be described as "the science of the strange behavior of children in strange situations with strange adults for the briefest possible period of time" (Bronfenbrenner, in press) certainly applies to that part of developmental psychology that deals with day care research. The question of ecological validity stresses the need for more studies of children in natural settings.

Does the Swedish Childrearing Study differ from previous studies in its approach?

1. The Swedish Childrearing Study compares children in full-day day care centers with children raised in home settings (own home, family day care homes, see also p. 44). The centers participating in the study (12 centers in phase 1, 27 centers in phase 2) are all typical Swedish day care centers, similar in physical design, daily routines, number of children per group, adult/child ratio, etc. and as such representative of the national norm.
2. The study is longitudinal in its design. More than 100 families have been followed for five years since the children were one year old, and we will continue to follow a subset of families in phases 3 and 4 when the children have entered school.
3. Extensive use of observation techniques in the natural settings has distinguished phases 1 and 2 from other studies of the impact of day care. We are not only interested in developmental outcomes but also in processes.
4. The comparison group in phase 1 of this study (children at home) was selected from the waiting-lists of the participating day care centers in an attempt to control for possible parental differences in attitudes toward day care centers and attitudes toward the maternal role. This fact has been recognized by Bronfenbrenner, Belsky and Steinberg (1976) who write:

"By selecting their non-day care samples from center waiting lists, Cochran (1976) and Peters (1973) were able to assure that their comparison groups were equivalent with respect to the critical variable of motivation to use day care. These two studies are important because they demonstrate that carefully designed field research can take advantage of natural experiments with natural controls." (pp. 9-10)

5. The Swedish Childrearing Study has been and will continue to be conducted beyond the confines of the laboratory.

This field orientation is another feature of the study which distinguishes it from most other researches related to child care.

Why Sweden?

Several of the shortcomings associated with earlier American studies have been avoided by carrying out the research in Sweden. That country has been generally recognized in the social sciences as a society with a number of characteristics which facilitate the conduct of longitudinal research. One such characteristic is the absence of the great difference in socio-economic circumstances (wealth vs. poverty) found in virtually all the major urban centers in the United States. Equally useful from a control standpoint is the absence of large families in Sweden; the children studied rarely have more than one sibling. Particularly important for a longitudinal study of day care is the consistency of approach found from one Swedish day care center to another. This contrasts sharply with day care centers in the United States, where quality of care is very uneven and diversity of educational philosophy is the norm (Cochran, 1977b). Finally, the relatively small size of Sweden and the careful record keeping which characterizes the Swedish public service system combine to insure that even the most mobile of families will not be "lost" to the researcher who depends upon the opportunity to make follow-up visits two or three years apart over a period of five to ten years.

Recent Research Related to the Swedish Childrearing Study.

Keeping the previously discussed limitations in mind we now proceed to look at available studies related to our own study. In doing this we will have to concentrate on research carried out in the U.S. since previous day care research in Sweden has been program-oriented. That is, organizational arrangements and activities in the centers have been related to the explicit goals of the Swedish Child Care Commission (SOU 1972:26) rather than compared with other kinds of child-rearing environments. We have found no Scandinavian studies comparing the experience and behaviors of children in full-day center care with those of children reared at home (Sjölund, 1969; William-Olsson, 1975).

We will divide the American studies into three groups; those which have focused on effects on intellectual development, those which have tried to assess social behavior and those which have dealt with internalization of norms and values.

Effects on intellectual development.

A number of studies have compared the intellectual growth of children in day care with children reared at home.

Winett et al (1974) compared the scores of children, 3 to 5 1/2 years old, in full-day day care centers, with babysitter, in half-day child care, or at home all day, on the Illinois test of Psycholinguistic Abilities, Peabody Picture Vocabulary Test, a Social development scale and a preschool scale. The hypothesis to be tested was that children in day care centers would score significantly higher on cognitive, social, and linguistic measures than children in the other three child-

rearing situations. No such differences were found; only on the pre-school scale there was a significant difference in that the mixed care group scored significantly higher than the full-day day care center group and the babysitter group, whereas the "at home" group did not differ significantly from the other three groups.

Schwartz et al (1974) made use of systematic observations of children's behavior to assess, among other things, cognitive development. Nineteen 3- and 4-year-olds who had been in day care from infancy were compared with matched subjects who had no day care experience prior to the study. No significant differences were found for the three cognitive variables included ("Successful at problem solving", "Ability to abstract", and "Planfulness").

Fowler and Khan (1974a) made use of Binet IQ and Griffiths GQ to measure the development of matched pairs of day care and home-reared children, where the former group was enrolled in a special "stimulation program" during the first two years of life. Although there was clear evidence that the day care children during these two years in the program progressed developmentally at a faster rate than the home-reared children, the differences were almost washed-out at age five when the "stimulation-program" had been absent for 2 1/2 years.

The above studies coupled with the absence of overall differences in mental development in the first phase of this study, lead us to the conclusion that neither the day care center nor the home can be said to be superior to the other when it comes to fostering cognitive development during the preschool years. It might be worth noting, however, that Bronfenbrenner, Belsky, Steinberg (1976), in their review of research on day care, point out that there are a handful of studies which

suggest that "for children from higher risk environments good quality day care may attenuate the declines in test scores frequently observed in youngsters from disadvantaged backgrounds" (p. 13).

Effects on social behaviors.

Data from phase one of the present study indicated that the home-reared one-year-olds interacted more with adults than did the children in the centers. Recent studies focusing on social behaviors suggest that children who have had day care experience interact more with peers than do children reared at home. In a longitudinal study by Moore (1964) boys who have been in day care during their pre-school years were found, even at adolescence, to be more concerned with social activities than their home-reared counterparts.

In the previously mentioned study by Schwartz et al. (1974) the two groups of children differed significantly on three of the nine traits as rated by the teachers; the day care group was rated less cooperative with adults, more physically and verbally aggressive with peers and adults, and more inclined to run about, but there were no significant differences between the groups in ability to get along with peers.

Lay and Meyer (1973) report that day care children interact more with their peers than with adults, whereas the opposite was true for children who had been brought up at home.

Supporting evidence comes from a study by McCutcheon and Calhoun (1976) cited by Bronfenbrenner, Belsky, and Steinberg (1976). According to these authors (p.44) McCutcheon and Calhoun report that the increased interaction with peers found in their day care sample was accompanied by a decrease in interaction with adults.

Prescott (1973) observed 112 children, ages 2 to 5, in day care centers, family day care homes, nursery-schools and homes. She found that interactions with adults were more frequent and intense in the home settings (both own homes and family day care homes) and that children in open structure day care were highest on all types of active rejection. Raph et al (1964) report a higher amount of negative interaction toward teachers among first graders with three years of group experience during the pre-school years than among those with only one year of group experience. This difference did not show up in interaction with peers.

Internalization of adult norms and values.

Our phase one finding of differences between center children and home-reared children in amount and type of social interactions, and particularly the finding that the home-children interacted more with adults in situations involving limit-setting by the adults, raises the issue of how these different social experiences might affect the internalization of adult norms and values. Is it possible that center children are slower in the acquisition of such norms and values, and might instead be more reliant on the peer group because of the larger amount of peer-interaction observed in some of the studies described above?

This line of reasoning is supported by Schwartz et al (1974) who, in interpreting their findings (and the findings of others) suggest that "children experiencing substitute care are more resistant to adult conformity pressure while remaining responsive to the peer group (p. 505)".

Bronfenbrenner (1970), although concentrating on 12-year-olds, also reports findings consistent with this notion in cross-cultural research on response to pressure from peers versus adults. He states (ibid. p. 179) that ".... children raised primarily in a single socialization setting differed from those exposed to a diversity of agents and contexts of upbringing in showing greater conformity to social pressures in their immediate environment." Hence, exposure to varied adult expectations coupled with more intense social interaction with the peer group might lessen the influence of adults and strengthen peer orientation in center children in comparison with children reared at home.

Day Care in Sweden.

During the past fifteen years the commitment to public day care in Sweden has increased noticeably. There are two main reasons for this increase. By providing full-time day care the state encouraged mothers who wanted to work outside of the home to do so, hence, solving the problems of shortage of labor prevailing in the middle of the 60's.. This economic function of day care has resulted in a tendency among politicians to find positive things to say about day care in times of labor shortage ("important with group experience", "fosters healthy independence") and negative things ("remember Bowlby", "a mother is always a mother") when women are not needed outside of the home. With the lack of conclusive research evidence as to the impact of full-time day care it has been easy to get away with such overgeneralizations. However, another function of day care, the societal function, is operating as a more stable and consistent force. This function relates to

the increased demands for equality between sexes and between different socio-economic groups in society. The general beliefs are that traditional sex-role patterns might change if and when women are given the opportunity to work outside of the homes or continue studying, and that socio-economic differences might be reduced if child-care outside of the home is provided to all families regardless of income.

If we look at available statistics (SOU 1975:62) we find that in 1967 thirty-seven percent of women with children 0-6 years old were working. In 1975 this number had increased to 60%. Of women with children younger than 3 years of age, 33% were working in 1967, a figure which had almost doubled by 1975 (57% of the women were working at least part-time).

Looking at these figures it becomes clear that the demand for public day care is high in Sweden. In 1970 the Swedish Child Care Commission estimated that five years later only 34% of those children whose parents needed full-time day care would have found a place for their child in a day care center. There are no more recent statistics available but this estimate is probably too high rather than too low. Hence, the majority of parents will have to find other ways of solving their child care problems, either by making use of family day care homes (public or private) and babysitters, or by arranging their working-schedule in such a way as to permit one of the parents to take care of the child(ren) while the spouse is working and vice versa.

The Swedish Child Care Commission.

Most of what happens in the area of public day care emanates from the recommendations of the 1968 Swedish Child Care Commission, which

presented its reports in 1972 (SOU 1972: 26 and 27). (Readers interested in a comprehensive presentation of the Swedish child care system are recommended to read Berfenstam and William-Olsson, 1973₂₀, and Blomqvist, 1976).

Primary Goals.

Apart from economic, organizational², and administrative issues, the Commission sets out the goals of the day care center in terms of how the environment best can provide the child with developmentally favorable experiences. The development of self-esteem, concept formation, and communication skills are considered to be three fundamental areas of crucial importance for the development of a healthy personality. The theoretical frames governing these goals are based mainly on the theories of Jean Piaget and Erik H. Erikson, treating separately cognitive and socio-emotional development, but also stressing the functional integration between these components.

While also using as a point of departure the theoretical models of Piaget and Erikson, this author extends the theoretical perspective of the Swedish Child Care Commission with his own view of human development, which is presented in the paragraphs which follow.

Human development is structure development. Structures develop through interaction with each other and through interaction with the environment, and they are human universals. Feelings derived from early interaction with the social world set the stage for the quality of future relations to people in that they create in the child a sense of basic trust or mistrust.

² For a description of the physical and social design and the daily routines in a typical day care center, see chapter 4, pp. 46-48.

No structure is independent of other structures; perceptual structures interact with cognitive structures just as linguistic structures do. Together they form a complex system, unique to Man (as far as complexity is concerned). The linguistic structures are crucial in their social functions. Language is a structure that has developed out of other structures to serve as an instrument for dealing with the social environment.

Through the development of language, experiences acquire meaning. The only way the child can incorporate these meanings is through action. In so doing he becomes aware of the general rules, "the norms". To quote Mead, he learns to take the role of the "generalized other".

By removing obstacles imposed upon the individual by other people, language helps the individual to act upon his environment, hence developing his structural system wherein lies embedded self-esteem, concept formation and communication skills. (Piaget, 1972; Piaget and Inhelder, 1969; Erikson, 1954; Mead, 1970; Liljeström, 1973; Kohlberg, 1969; Bandura and Walters, 1963; White, 1959).

From this it can be concluded that human development is enhanced by an environment that is rich and stimulating and provides opportunities for role-taking. The Child Care Commission acknowledges the fact that it is insufficient to look only at the child care setting and the needs of the individual child. The double function of paying attention to both the needs of the child and of his parents are stressed throughout the report (SOU 1972:25). This double function, and its implicit consequences, fits nicely with the theoretical model for research on the ecology of human development put forward by Bronfenbrenner (in press), where not only the immediate settings containing the child (the micro-

systems) are of importance, but where one has to take into consideration also the meso-systems (neighborhood, world of work, school) and the macro-system (general beliefs, institutions and customs of the society) if one wants to understand the complex conditions affecting child development.

CHAPTER III

METHODS AND PROCEDURES

Phase Two.

When we contacted our 120 families during fall of 1973 and spring of 1974 (letters and telephone calls) most of them indicated a strong willingness to continue to be involved in the study. One hundred and seven families answered positively to our request for participation. Only 102 could be included, for reasons having to do with feasibility of conducting the research. Family participation in phase one vs. phase two is described below.

Focus and Predictions.

This second phase of the longitudinal childrearing study differs from the first phase in that there is a shift in focus from a description of settings and socialization practices to a more balanced examination of settings and practices on the one hand and child behaviors on the other. A second shift is from the preoccupation with immediate settings (the nuclear family, the day care center) to a more balanced recognition of the linkages among settings, institutions and social networks.

Our primary prediction at the setting level, based on the physical as well as the social characteristics of the different settings, is

that there will continue to be more adult-child interactions in the homes and more child-child interactions in the day care centers.

Table 2.

Family Participation/Phase One - Phase Two.

	<u>Number of families</u>
Families participating in phase one	120
Families participating in phase two	102
Families lost since phase one	18
Reasons for non-inclusion:	
- Moved outside of Sweden (Iran, Finland, Norway)	3
- Travelling abroad during period	1
- Moved beyond a radius of 600 miles/Excluded for budget reasons	5
- Unwilling to participate	5
- Never answered, despite repeated requests	4
	18

At a more general and descriptive level, we are interested in the ways that the home settings of all the families in the study have evolved during the past four years. How much movement has there been from one housing location to another? Have there been changes in housing type? Have families on center waiting-lists eventually placed the child in the center, or instead chosen another childrearing alternative? In how many cases has marriage, separation and remarriage occurred in the intervening four years? How many of our subject children now have younger brothers and sisters?

Socialization practices will, we have predicted, continue to be guided by the adult role requirements assigned to each setting. A basic hypothesis is that adults in the homes will set more limits (structure) for the child, based on their (the adult's) needs than adults in the centers, while the limits placed by the adults on the actions of children in the centers will be oriented toward peer-peer interaction. We wonder how much of an effort will be made by mothers at home to seek out peer socialization opportunities for their children, and what form those opportunities will take.

Our emphasis in this second phase of the study, while still descriptive, has been increasingly on the behaviors of our subject children. We have predicted that center children will be less instrumental in their interactions with adults than children at home; i.e., use the adults less as social resources. We think that the day care child will use the social resources of peers more, and will seek information from and provide information to peers more than the home based child. We hypothesize that the center children will be in conflict with other children more, but will also cooperate more with peers than the home based children. We predict that the day care child will be in conflict with adults less often, and so will have fewer opportunities to comply with adult requests than will the home child.

The discovery of different adult and peer orienting relationships in the first phase has led to an interest in the relative influence that adult and peer imposed norms have on the children in our sample. We think that peer pressure will have more influence on the actions of center, than home, children, while home children will comply more readily than center children with the normative demands of adults.

This prediction stems in part from earlier work by Bronfenbrenner (1967) identifying the effects of adult and peer influence on the behavior of preadolescents reared in contrasting ecological settings.

No significant differences between center children and home children in overall development were found in phase one of this study. This fact, plus data from other studies comparing the cognitive performance of children reared in day care vs. home care (Schwartz et al (1974); Fowler and Kahn (1974b); Winett et al (1974) has led us to predict that the center-based and home-based children in our sample will not differ significantly in their overall performance on a test of mental development.

Child Care Arrangements - phase two.

Four years passed between the first and follow-up phases of this study. During this period the lives of the children and their families underwent various changes with regard to factors like size of the families, the parents' type of work and the families' housing arrangements. Child care arrangements also changed; while some children stayed at home with their mothers throughout the four-year period and others continued to be cared for in the day care center, there were some families that during this period found a place for their child in a center, and still other families who decided to move their child from the center back into the home, often because of the arrival of a younger sibling.

Table 3 describes the changes that have occurred over this four-year interim period with regard to child care arrangements.

Table 3.

Changes in child care arrangements / Phase One - Phase Two.

Phase One	Home Care			Center Care		
	60 children			60 children		
Phase Two	8	35	17	17	33	10
	Not incl.*	Continuous Home-care	Home to Center	Center to Home	Continuous Center-care	Not incl.*

* See page 23 for reasons of non-inclusion.

Table 3 shows that 35 children have experienced no center care at all in five years (continuous home-care), and that 33 children have experienced continuous center care during that same period. The remaining 34 children still participating in the study have received care in both home and center during the period between phases one and two.¹

¹ In phase one it was possible to separate the Home Group into two groups, "own home" and "day home", for further analysis (Gunnarsson, 1973); 34 children were taken care of by their mothers in their own homes and 26 children spent their days with a day mother in her home (pg. 2). When we planned for phase two we therefore assumed that the number of children who had stayed with the day mother during the four-year period would be large enough to be included as a separate comparison group. However, this assumption did not prove true; only six families continued to use the day home as their child care arrangement, a number too small to warrant special attention. We will therefore limit our data analysis to comparisons between center and home settings, keeping in mind that not all the children in the Home Group are reared exclusively in their own homes by their own mothers.

The 102 families were visited, and all the children were observed and tested, at the same point in the child's life, 5 1/2 years of age.²

The changes in child care arrangements presented in Figure 3, coupled with other changes within the family, are part of life and permit us to take a closer look at how families choose (or are forced to choose) different routes in life, and how this might affect their children. In chapter four (p. 49), we will further analyze changes in family characteristics (number of parents, number of siblings, housing arrangements, socio-economic level of family).

Although real and understandable, these changes are nevertheless, methodologically somewhat inconvenient: any differences which might have been neatly explained by differences in child care experiences are now confounded by the presence of co-varying family characteristics. However, had we attempted superficially to maintain separation by retaining a cross-sectional design in phase two (new families, carefully matched) we would have violated the ecological integrity of the design by artificially creating a day care sample whose family characteristics would have been unrepresentative and ungeneralizable to the general population of Swedish families using center care.

2

The base-line was cross-sectional in its design and the sixty children in each of the two major settings, homes and centers, were observed and tested at either 12, 15, or 18 months of age (20 children at each age-level). The rapid developmental changes occurring during the first half of a child's second year warranted this type of design at that point. For phase two, however, age was controlled by visiting all children when they were the same age.

Measures.

The settings and practices data gathered in phase two are descriptive and observational. The instrument used to describe the adult-child and child-child interactions is called the Social Interaction Scale. This scale was drawn from the work of several other social scientists (White and Watts, 1973; Bronson, 1973; Emmerich, 1971). They are to be credited with carrying out the critical processes of conceptualizing major categories of behavior based on field observations, and of testing, re-testing and standardizing items.

Social Interaction Scale.

The Social Interaction is a composite of items from three existing observation instruments. The activity categories included have been carefully selected, revised and elaborated in the interest of producing the most useful and complete scale possible for the purposes of the Swedish Childrearing Study. The instrument is, then, a modification of the work of others, rather than an original outgrowth of the Project.³

³ The process of modifying existing instruments began with an examination of White's Manual for Assessing Social Abilities of 1 to 6 Year Olds, Bronson's Executive and Social Skill Profile for Preschool Children, and Emmerich's Classroom Observation Rating Scale (Personality). There was, of course, a great deal of overlap among the three scales and on items where this occurred our item definitions usually reflect the contributions of each. There are also several instances where a behavioral category included in one scale was not represented in the others. The decision to include such items, and to add a few of our own, was based on our perception of each item's relative importance in the stream of social behavior. After deciding on the general categories of behavior to be measured, individual items were assessed, revised and elaborated until a conceptually satisfactory rationale for each was generated. Finally, the scale was tested on a group of children in a Gothenburg day care center.

The scale is made up of eight major social activities or interaction types, each of which is broken down further into subcategories. The major interaction types are:

1. Attention seeking
2. Use of social resources
3. Leading and controlling
4. Compliance/following
5. Affect
6. Imitation and role play
7. Conflict/competition
8. Cooperation

In Appendix 1 are listed sub-categories with definitions and examples. These activity types represent the focal theme of the interaction for the subject child, as perceived by the observer. Any response by the partner in the interaction (adult or peer) to the situation is also coded. These proactive or reactive responses are called interaction techniques, and consist of the following items:

1. Teaching
2. Supervising, small talk
3. "Do's"
4. "Don't's"
5. Justification
6. Positive reinforcement
7. Negative reinforcement
8. Distracting
9. Helping, doing things together

10. Refusing help

11. Ignoring

For an elaboration of the rationale behind and the development of the technique codes, see White and Watts (1973). Four other major pieces of information have been gathered about each interaction. The duration of each interaction has been recorded. A record has been kept of who initiated the interaction (subject, adult or peer). The object person in the interaction has been identified (adult or peer), and finally, where it pertains, the success of the object person (adult or peer) in his/her use of a certain technique is recorded.

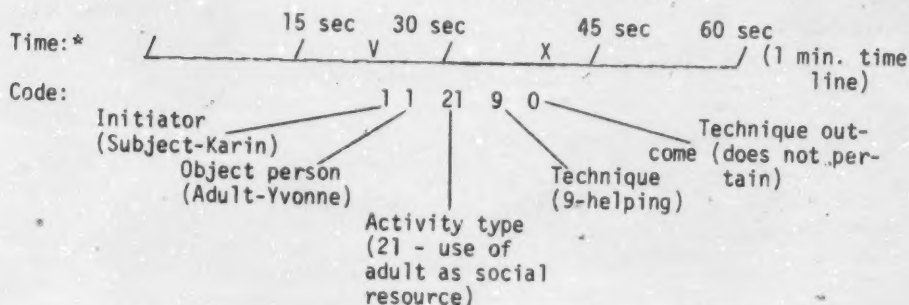
Data gathered with the Social Interaction Scale was used to test predictions generated at the settings and socialization practices levels. Comparisons were made of type and amount of adult-child and child-child interactions in the different settings. We compared the relative amount of limit-setting techniques used by both adults and peers. Attention was paid to the more or less instrumental nature of subjects' interactions with adults and peers in the homes and in the day care centers. We also compared the interaction patterns for boys with those of girls in an effort to identify any sex-linked patterns of socialization (Maccoby and Jacklin (1974). Finally, we were interested in comparing competitive and cooperative activities between settings.

A description of two types of interactions (one in a home and one in a center) and how those were coded by the observer, might clarify the use of the observation instrument:

1. (center)

"Outdoor play. Yvonne (adult) is sitting on a bench engaged in a conversation with Martin, who has his right arm in plastercast and takes it easy today. Karin (subject) comes running: 'You have to help me with this zipper, there is sand in it, and I can't get it open'. Yvonne turns to Karin, pulls the zipper a few times, blows on it, 'There, now it works again'. 'Thanks', says Karin and is off."

(Duration: 15 seconds)

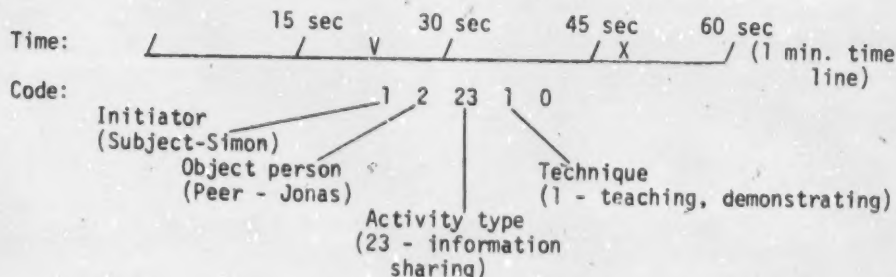


* The line on the code-sheet represents one minute of observation, 15 seconds between each bracket.

2. (home)

"Simon (subject) catches sight of Jonas (peer), who is carrying an air-pump. 'What's that?' asks Simon. 'It's a pump and if one goes like this (demonstrates) one can inflate balloons with it', says Jonas. Both boys try it."

(Duration: 25 seconds)



Doll Play Dilemma.

Reference was made earlier to our interest in the relative influence that adult and peer imposed norms have on the actions of the children in our sample. We wondered how the children would respond in situations where adults and peers were signaling competing expectancies for them. Because we knew that these situations occur so infrequently in the daily course of events as to preclude recording a representative number of instances through naturalistic observation, we chose instead to present them to the children as doll play situations (Lynn and Lynn, 23). The six-doll dilemma situations are presented below in narrative form. Apparatus included mother, father, subject and same-sex peer dolls and both indoor and outdoor doll furniture and accessories (sofa, chair, rug, table, fence, lawn, tree, flowers). The general form and the procedures for presenting the situations to our children were adapted for our use from the work of Kärrby (1971), who has also served as an advisor to the project.

Doll play situations.

1. (scissors)

One day Anna (Pelle) was alone at home and had nothing to do. Her (his) mother had gone shopping. Anna (Pelle) wanted very much to cut some pictures out of a newspaper but her (his) mother had said that she (he) mustn't use the scissors when she (he) was home alone. Do you think Anna (Pelle) used the scissors, or not?

/What happened then? What do you think Anna (Pelle) was thinking?/

2. (apple-tree)

One day Anna (Pelle) was alone outside playing. In the garden there was an apple-tree with some apples on it. Anna (Pelle) wanted very much to take an apple from the tree, but her (his) father had told her (him) that she (he) wasn't allowed to. Do you think that Anna (Pelle) took an apple, or not?

/What happened then? What do you think Anna (Pelle) was thinking?/

As the reader can see, the first two situations ask the subject to consider (through the doll) transgressing the requests of the parents, with no peer involvement.

In the last four situations pressure is applied in different directions by both parent and peer:

3. (fence)

Anna (Pelle) was outside playing. When she (he) was about to climb on the fence, her (his) father called: "You mustn't climb there Anna (Pelle)!" Anna (Pelle) walked away from the fence.

A little later Anna's (Pelle's) friend Stina (Kalle) came visiting. After they had played for a while in the sandbox, Stina (Kalle) walked over to the fence and said: "Let's climb over the fence, Anna (Pelle)". Then she (he) started to climb.

Do you think Anna (Pelle) climbed over the fence, or not?

/What happened then? What do you think Anna (Pelle) was thinking?/

4. (cookies)

One day Anna (Pelle) and Stina (Kalle) were playing in the living-room. Anna's (Pelle's) mother had gone to the store, so they were

alone at home. There was a plate with cookies on it on the table, but Anna's (Pelle's) mother had told her (him) not to take any cookies. Then Stina (Kalle) said: "Let's take a cookie. Your mother won't notice if we only take one a piece."

Do you think Anna (Pelle) took a cookie, or not? /What happened then? What do you think Anna (Pelle) was thinking?/

5. (play-house)

One day Anna (Pelle) and Stina (Kalle) was playing in the living-room. They placed a blanket over the table and played house. When Stina (Kalle) had to go home to eat, she (he) said: "Let's leave the house the way it is, and continue to play when I get back." Then she (he) left. A little later Anna's (Pelle's) father came in and said: "We really have to clean up in here. Please fold the blanket, Anna (Pelle)." Do you think Anna (Pelle) folded the blanket, or not? /What happened then? What do you think Anna (Pelle) was thinking?/

6.⁴ (babysitting)

One day, when Anna's (Pelle's) mother was going shopping, she asked Anna (Pelle) to stay home and look after her (his) little sister. "O.K.", said Anna (Pelle). When her (his) mother had left, Anna's (Pelle's) friend Stina (Kalle) came knocking at the door, saying: "Come on outside and play!" Do you think Anna (Pelle) followed Stina (Kalle) outside to play? /What happened then? What do you think Anna (Pelle) was thinking?/

⁴The situations were presented in the following order: 1 - 3 - 4 - 2 - 5 - 6.

In scoring the first two stories we recorded whether the subject child predicted that the doll would act, in accordance with, or against, the wish of the parent, and in the other four stories in accordance with the wish of parent or peer. We had predicted that peer pressure would have more influence over the actions of center than home children, while home children would comply more readily than center children with the requests of adults.

Mental Development.

No significant differences between center children and home children in overall development were found in phase one of this study. Bronfenbrenner (1975), in a review of research on the effects of day care, states that "... no firm conclusion can be drawn about the impact of day vs. home care on the cognitive development of the child. About all that can be said is that the existing evidence does not justify claims for the superiority of one context over another, so far as intellectual growth is concerned during the pre-school years" (pg. 8). These findings, plus data from other studies comparing cognitive performance of children reared in day care vs. home care (Schwartz et al, (1974); Fowler and Khan (1974b); Winett et al, (1974), led us to predict that the center-based and home-based children in our sample would not differ significantly in their overall performance on a test of mental development.

Griffiths Mental Development Scale

To test our prediction, the Griffiths Mental Development Scale was administered to each child during our first visit in his home

(see pg. 43 data collection process). This particular instrument was selected for use for a number of reasons: 1) the Scale was used in phase one and we wanted to maintain consistency of conceptual framework and test design; 2) the test is known to be reliable (test-retest reliability, $r=.77$, Griffiths (1970), pp. 74-75); 3) Swedish early childhood specialists are familiar with the work of Ruth Griffiths, and diagnosticians who used the scale in their daily work were available to us as instructors for the testers. Procedures for using the scale are described in great detail by Griffiths (1970).

The scale is divided into six different subscales: Locomotor, Personal - Social, Hearing and Speech, Eye and Hand Coordination, Performance and Practical Reasoning, and gives an overall development quotient (GQ), as well as separate subscale scores. A description of the items with which our 5 1/2 year olds were most concerned are included in Appendix 3.

Daily Routines, Family History, Social Networks, Parent Attitudes.

Four other types of information were gathered in an attempt to present a more complete picture of our children's upbringing experiences.

Daily routines

Parents and caregivers were asked to describe the child's normal routines during a weekday, to make it possible for us to identify patterns of clearly distinct experiences occurring in each setting. In the case of the center child (or if the child spent his day with a day mother) parent reports accounted for the child's waking hours before and after the center (day home) experience.

Center caregivers (and day mothers) were then asked to complete the picture. This information was collected during the first visit to each family, and also served as a "non-threatening" introductory conversation.

Family history

During the first home visit we asked parents about family characteristics and choice of child care arrangements. In phase one, when children were 12-18 months old, 60 in all-day care were carefully matched with 60 being reared exclusively at home. Pairs were matched by age, sex, number of siblings, housing type and location, and socio-economic level of parents. The match on number of parents was less perfect. Seventeen (28%) of the center children lived with one adult, while in the home group the number was seven (11%).

The data regarding child care arrangements presented earlier showed that while somewhat more than half of the children had remained in the same type of day care setting there had also been a number of shifts from one setting to another (home - center, center - home). We wanted to know whether shifts from one setting to another were random across family type, or if families with a particular set of characteristics were more likely than other families to remain in a setting or shift? (We need to remember that family characteristics themselves have changed over time.) Family variables included in this analysis were number of parents, number of siblings, type of housing, and socio-economic status (Appendix 4).

Social network of the child

Information about each child's social interaction patterns was

collected through direct observations in the setting where the child spent his weekdays. Since we are also interested in linkages among settings, institutions and social networks, we have systematically gathered information about the nature and extent of each subject child's social network ties with both children and adults outside the nuclear family. The parents were asked to identify adults and children with whom their child had regular contacts; i.e., relatives, adults and/or peers in the neighborhood, in the child care setting, etc., and to specify frequency of contacts, sex and age of the persons included. This interview was also conducted during the first visit to each family (see data collection process - pg. 43). Appendix 5 includes coding sheets for the Social Network Interview.

Parental attitudes

Finally, parents were also asked to fill out an attitude questionnaire concerning their child rearing practices and the development of their child. The purpose of this questionnaire was twofold: a) to correlate the child's responses to the adult/peer orientation doll play dilemmas (pg. 32) with the parents' feelings about a number of statements related to childrearing (on the authoritarian - democratic dimension), and b) to compare "home" and "center" parents' expectancies of their child's development of personality characteristics and personal - social competence.⁵

The instrument is composed of items from existing parental attitude scales (Cross and Kawash (1968); Kärrby (1971), Becke and Krug (1965), Radin and Glasser (1972) and a developmental scale (Griffiths, 1970).

⁵ The latter aspect falls beyond the scope of this thesis, and will be analyzed and reported on elsewhere.

The questionnaire is included in Appendix 6. It was left with the parents on visit one, and the parents were asked to fill it out (both parents) and mail it back to us. Ninety-seven of the 102 questionnaires came back properly filled out.

Grouping of subjects.

As the reader will remember, the children's history of child care arrangements differed in various respects (pg. 22). For the purpose of analyzing the data on developmental performance, three groups were created:⁶

- a) "pure center" children who have experienced center care for at least four years (33 children):
- b) "pure home" children who have experienced no center care during that same period (34 children)⁷, and
- c) "mixed group" children who have experienced both center and home care during the period (34 children),

The comparisons between groups a) and b) were the prime focus of the analysis, the "mixed" group being included mainly to complete the picture.

When analyzing the data gathered with our doll play situations we have only included our "pure" groups; i.e., those 33 children who have been reared in the day care center continuously since phase one

⁶ The assumption underlying this grouping is that child care history factors best explain variation in scores on the Griffiths Mental Developmental Scale, an assumption which does not apply to the analysis of our observational data.

⁷ One girl was not included, since she was unwilling to take the test.

("pure center") and those 35 children who have stayed at home the whole period ("pure home"). Again, the assumption was that child care history factors best explain variation in responses to the dilemmas.

For purpose of analysis of our observational data, center children were those in a center during phase 2 whether or not they were in a center or home setting in phase one. The same was the case with children at home in phase two. The "home group" therefore consisted of 50 children, 35 of whom have been in the home the whole period and 15 who have moved from the center back into the home. The "center group" was made up of those 33 children who have been in the center since phase one of this study plus 15 children who have moved from the home setting into the center at a later date, for a total of 48 children.⁸

This grouping was based on our assumption that the interaction patterns observed when watching a child in the day care center are governed more by the immediate nature of the center experience than whether the child had been attending the center for two or for four years. The assumption was tested for validity and the results of this test are shown in Appendix 2.

Procedure.

Data collector selection and training

Two data collectors, a male and a female, were recruited from a pool of Masters level students at Gothenburg's Department of Pedagogy. Both

⁸ Two children, who had been in the center for three months only, and two children, who had moved from the center to the home four months prior to our visits, were excluded from the analysis since we judged these periods to be too short "adjustment periods". (Six months was our required minimum adjustment period.)

were trained in psychology, sociology, and "pedagogik", and one had a young child of her own. A third person joined the project with an undergraduate degree in the social sciences and a masters in language. She is also a parent. Incentives provided included a payment per visit and access to the data for masters theses.

The training of data collectors occupied the better part of six weeks (September - October, 1974). Twenty 4-hour training sessions were devoted to the Social Interaction Scale. These included memorizing code numbers, discussing definitions, practice coding of descriptive examples, playground observations, joint coding of videotaped interaction sequences (home and group settings), practice in live center settings and reliability checks. Formal reliability testing took place at the end of the training period, and again in April, 1975, when half of the families had been visited. Observer reliability ranged from .7 - .9 (see Appendix 7).

Parts of several weeks were spent in training with the Griffiths' Mental Development Scale. A diagnostician certified to use the scale provided 16 hours of instruction, which included systematic presentation and discussion of items, familiarization with the test materials, demonstration with preschool children and help with inter-rater reliability testing. Time was spent with Griffiths' book (1970), and in practice sessions with friends' children and with children in several day care centers. The "expert" returned periodically for discussions of problems encountered in the field (child fatigue, parental questioning, etc.). A reliability test was conducted at the end of the training and the inter-rater reliability reached 1.00 (Appendix 8).

Training for presentation of the doll play situations and questions about parent roles involved memorizing stock narrative presentations and simultaneous manipulation of the doll materials. Two half-day sessions were spent practicing the presentations and time was also devoted to viewing and critiquing video-taped test situations. All of the doll presentations to subject children, which have been taped, were interpreted by one person. An inter-rater reliability test conducted on a sub-sample of the cases (25) indicated a 1.00 inter-rater agreement.

Data collection process

Visits were made to each family when the child had reached an age of 5 1/2 years. A letter and then at least one telephone call preceded every initial home visit. The project leader also visited each center before data collection took place at that site (29 centers) to prepare the center personnel for the research, etc.

Three data collection visits were made to each child usually within a week period. Figure 1 shows the sequence of events as they occurred during visits one through three.

The project leader always accompanied the data collector on visit one, which was always made to the child's home. While he explained the goals of the second phase, and conducted all of the parent interview schedules, the data collector administered the Griffiths' test to the child. This hour of pleasant interaction between the child and the data collector was extremely helpful in creating a positive feeling in the child toward the data collector's subsequent return as an observer. Visits two and three were carried out by the data collector alone in the center or home setting, and involved primarily observation

using the Social Interaction Scale and administration of the doll play exercises.

Figure 1.

Data Collection Process/Visits One - Three.

	Visitor(s)	Setting	Duration	Data collected
VISIT ONE	Project leader and Data Collector	Always in child's home	2 hours	Familiarization Interviews: (project-leader) Description of Project Daily Routines Family History Child Care History Social Network Griffiths' Mental Dev. Scale (data collector) Attitude Questionnaire Introduced and explained
VISIT TWO	Data Collector (same as in visit one)	In Child Care Setting (home, day home center or play-school)	2 hours	Observations (Social Interaction Scale) Doll Play Dilemmas Adult roles questions.
VISIT THREE	Data Collector (same as in visit one and two)	In Child Care Setting	2 hours	Observations (Social Interaction Scale) Doll Play Dilemmas

Observation procedure

The observation period was divided into one morning and one afternoon visit (two consecutive days). Each child was observed in his

"natural setting"; i.e., our center children were observed in the centers and our home children in their homes or in the day homes. Furthermore, 22 of 50 "home children" attended the half-time public play-school to which all six-year-olds are accepted if places are available. These 22 children were observed in their homes in the morning and in the group setting in the afternoon.⁹

Total amount of observation per child was 60 minutes divided into twelve 5-minute observation periods. The observer started morning-observations 9:00, 9:30, or 10:00, observed for five minutes, spent five minutes going back over the code-sheet making sure that all the information had been registered, observed for another five minutes, checked, etc., until he/she had completed six five-minute observation periods. He/she then returned the following afternoon for another hour of observation, adding six more five-minute periods to the data-pile. Morning observations always took place between 9:00 - 11:00 and in the afternoons observation periods were always scheduled between 2:00 - 4:00.

⁹ The reader might feel that this fact will make home and center comparisons more difficult to interpret since 44% of the home children also had some group experience similar to that of the center children. However, if we are interested in comparing the experiences of children who spend their days in the center, with the experiences of children who don't, the fact that being a "home-child" often includes spending part of the day outside the home, in a play-school or with a day mother, is a reflection of reality and should be treated that way and not dismissed as "scientifically inconvenient". Furthermore, it gives us an opportunity to divide the home group into two sub-groups, with or without play-school, for further analysis, to see if the play-school experience moves that group of children closer to the center group with respect to social interaction patterns. This analysis will be carried out later and will be reported on elsewhere.

The reasons for this standardization of observation time was to avoid observing during naptime, lunch, before the child had arrived at the setting or after he/she had left for the day.

In conclusion, each child was observed, and his social interactions were registered, in his natural setting during twelve five-minute periods for a total of sixty minutes per child. This gives us 48 hours of center observations (48 children were observed in the day care center) to describe and compare with 50 hours of home or play-school observations (50 home children).

CHAPTER IV

RESULTS: Family Characteristics

This study was conducted in Gothenburg, Sweden's second largest city, located on the west coast. Six hundred thousand people live in Gothenburg, an industrial port city, home of the Volvo Car Factory, the SKF Ball Bearing Company, several shipyards, and Scandinavia's largest harbor.

Seventeen percent of all pre-school children in Gothenburg now have a place in an all-day group care setting (day care centers - 75%, family day care homes - 25%). The demand for more places is high; only 38 percent of those children whose parents want a place for them in a day care center now have one. The number of available places in the day care centers in Gothenburg is planned to have doubled by 1980, (Förskoleplan for Göteborg, 1975).

The Day Care Center

The typical day care center is neighborhood based, designed and built specifically for its purpose as a child care setting, and staffed with trained pre-school teachers or children's nurses. The center at Sommarvädersgatan (Summer weather Road) is a good illustrative example:

This "daghem", one of several in the area, is located in a western suburb and serves families who live in apartment buildings in the neighborhood surrounding the center. Most of the adults in the area

are factory workers or clerks, working at the Volvo car factory or at one of the shipyards. The number of one-parent families is relatively high. The center was built in 1972. It is a one-floor "standardized" wooden building and has 56 places available for children in four age-groups: toddlers (10), 3-5 year olds (15), 5-7 year olds (16), and 7-12 year olds (15 - after school care). Most centers group children by age. In many centers there is also an infant group. "Sibling-groups" are becoming more and more common, following the recommendations of the National Child Care Commission for non-age-segregated groupings, (SOU, 1972). Two full-time pre-school teachers, plus one half-time assistant, take care of the 5 to 7 year olds, the group involved in this follow-up study. There are 16 children in the group, nine boys and seven girls, and six of the children have only one parent at home. The parents all work full-time. The children arrive at the center about 7 o'clock in the morning and are picked up by 4:30 in the afternoon.

The indoor area is made up of five rooms: a small "doll-room"; a "cozy-room" with pillows, books and an aquarium; a carpentry-room; a large play-room ("large-muscle room") where the children take their naps; and a room with child-sized tables and chairs, electric stove, sink, etc., where the children do puzzles, bake cookies, and have their meals.

Outside, the children have opportunities to play "across the age-groups" since there are no separating fences. Play-equipments consist of swings, sandboxes, jungle-gyms, slides, tricycles, wheelbarrows, etc. The ground is covered with grass, bushes, and sand, and

the whole area is fenced in, to prevent the children from escaping into "the world outside" with its street-car tracks and car-traffic.

In our study, the center children have been visited and observed in milieu's similar (or equivalent) to this one. Our fifty center children are distributed across twenty-nine such day care centers, twenty-five in the Gothenburg area and four in other parts of Sweden (as compared to 12 centers in Phase 1). The highest number of participating children in a single center is five.

The Home.

The "typical homes" of the children in our study are of two kinds, the apartment in a downtown or suburban apartment building, and the private home.

Fifty-five of the children live with their parents (and siblings) in modern, 4 or 5 room apartments in public or private apartment buildings three to five stories high. An apartment usually consists of a kitchen, a living-room (where the child is welcome to play), and two or more bedrooms. Most of the children have a room of their own or, in some cases, share a room with a brother or a sister. The standard of living in these apartments is usually high; there is as a rule central heating, a bathtub, refrigerator, freezer, and a washing machine. The apartment buildings are usually surrounded by one or more small playgrounds, parking lots, and a couple of stores where daily necessities can be bought.

Forty-seven families live in their own private one-family house or row-house. These are usually newly built, have 5 or 6 rooms (kitchen included) and are located in suburban residential areas. Each house

has its own outdoor area with a small garden, and the neighborhood also has several playgrounds with equipment for the children.

Family Characteristics.

Before we start looking at results related to social interaction patterns, mental development, and adult vs. peer orientation, we need to examine the evolving characteristics of our 102 participating families. This picture will serve as a backdrop for the examination of other findings. Center and non-center families will be described on the following dimensions: number of parents, number of siblings, sex of child, housing arrangements, and socio-economic level of the family.

Table 4 presents these data and is followed by a discussion of the findings, with parent statements inserted when appropriate:

It can be concluded from Table 4 that different types of families choose (or are forced to choose) the day care center, rather than care for the child at home. Children in center care are more likely to have only one parent in the home (Chi square: 9.68; p less than .01) (remember that the phase one match was imperfect on this variable).

To survive financially, without having to rely exclusively on social welfare benefits, it is a "must" for the single parent to find a place for the child outside of the home where he or she can be taken care of during that part of the day when the parent is working. Single parents have, until recently, received highest priority for available spaces in centers, so this finding is easy to understand.

Table 4.
Child Care Arrangements and Family Characteristics

102 Families - Second Phase

Child Care Arrangements	Number of Families	Number of Parents/Family		Sex of Child		Number of Siblings		Housing Arrangement		Socio-economic* level of Family		
		1	2	Boys	Girls	0	1 or more	Apt.	Villa	I	II	III
Continuous Center	33	12	21	15	18	17	16	24	9	6	22	5
Home to Center	17	4	13	7	10	7	10	13	4	3	11	3
<u>Total now in Center</u>	<u>50</u>	<u>16</u>	<u>34</u>	<u>22</u>	<u>28</u>	<u>24</u>	<u>26</u>	<u>37</u>	<u>13</u>	<u>9</u>	<u>33</u>	<u>8</u>
Continuous Home	35	3	32	24	11	8	27	13	22	8	22	5
Center to Home	17	1	16	15	2	2	15	5	12	2	12	3
<u>Total now in Home</u>	<u>52</u>	<u>4</u>	<u>48</u>	<u>39</u>	<u>13</u>	<u>10</u>	<u>42</u>	<u>18</u>	<u>34</u>	<u>10</u>	<u>34</u>	<u>8</u>

PHASE ONE

Center	60	15	45	37	23	53	7	58	2	6	43	11
Home	60	6	54	36	24	54	6	55	2	11	39	8

* The socio-economic level of a family was determined (as in phase one) by combining information gathered about three indices: education of both parents, occupation of both parents and the family's dwelling type (ratio of rooms per person). The scores of the mother and the father were added together and then divided in half to determine a family score. (I is high; III is low). See Cochran (1973) for more details (pp. 40-41; Appendix 2.)

Table 5 describes the changes over time (if any) in "number of parents", and associated child care arrangements.

Table 5.

Changes in "number of parents" and child care arrangements between phases one and two.

Number of Parents		Child Care Arrangements				
Phase One	Phase Two	Continuous Center	Home to Center	Center to Home	Continuous Home	Total
1	1	8	1	0	2	11
2	1	4	3	1	1	9
1	2	1	1	2	0	4
2	2	20	12	14	32	78
Total		33	17	17	35	102

In the 13 families where changes have occurred in the number of parents two of the four mothers who have gotten married have removed their child from a center and now care for the child at home. Three of four mothers who took care of the child at home during phase one and since then have divorced have found a place in a center for their child and started to work outside of the home.

"If the day care center didn't exist I don't know what.... you've got to eat!" (single mother)

"Of course, it's terrible when you're alone with two kids (newly divorced) and you don't have a place in a day care center for them. I don't want a family day care mother or babysitter. Luckily, grandma has promised to help with the children when I begin to work next month." (single mother)

Also in Table 4 it can be seen that center children are more likely than home children not to have brothers and sisters; when families plan for a second child they must take into account that they might not find a place for the new family member in a center, which might force one of the parents (almost always the mother) to give up her work and stay at home with the children. This probably explains why in the continuous center care group 50% have no siblings while in the center to home group 88% have 1 or more siblings.

"One child is enough, and you know that you have a place in the center and you don't have to stay at home. I want to work!" (center child)

"I'm not really the 'housewife type', and if we had had more while I was at home, I don't think we would have got a place for them in a center..... The center is doing all right for Kent, and I am happier when we meet, now that I'm working." (center child)

"When our girl was born I kept Tomas (my son) at home as I was off work because of my pregnancy. Then, we didn't get a place for both of them, so I had to stay at home.... Now I have two other children whom I look after and a house, so there's a lot to do. I'll begin to work again when the kids start school." (home child)

A third finding is that "center families", which include the larger number of single-parent families, have remained in relatively less expensive apartments while the "home families" often have moved from downtown or suburban apartments to suburban private homes.

There are several other reasons why as many as 35 families have cared for their children at home throughout the period (continuous home), despite the fact that the children were placed on the waiting lists at an early age. Here are four common reasons in the words of the parents:

- administrative obstacles/lack of places

"When we moved to this place (new district) they didn't count our time on the waiting list. We had to start from the beginning. Hopeless!"

"All our children are on the waiting list. We have actually got a place for all the three of them, but in three different centers! Ridiculous, I want to work!"

- part-time work does not qualify

"I only want to work part-time to have time enough to be with the children, but then you don't get a place in a day care center."

- child sensitive to infections

"Actually, we got a place in the center for both our boys but we soon discovered that Pelle was often sick so we decided that the center wasn't the right place for him."

- waiting list only used as an "insurance"

"We were on the waiting list just in case anything would happen. We know all the time that I'll stay at home with the children and we said no when we were offered a place."

The proportion of boys to girls in the two settings has changed dramatically since phase one when there was a 3:2 ratio in both settings. We have no explanations of the fact that we now have more girls than boys in the center sample (56% vs. 44%) and substantially more boys than girls in the homes (75% vs. 25%), but these new findings will require the inclusion of "sex of child" as a separate variable in further analyses of our data.

Finally, the distribution of families across socio-economic levels has stayed the same since phase one with a majority of the families found at level II. The indices used to determine a family score continue to be education of both parents, occupation of both parents, and the family's dwelling type (ratio of rooms per person).

Daily Routines.

Data were collected about the daily routines of the children in the center and home environments. Parents, day care mothers, center and play-school staff provided the information needed to create a picture of the normal weekday in terms of clearly distinct experiences occurring in each setting.

In the non-center group of families three child care settings were analyzed, the home, the day care home, and the part-time play-school. Twenty-two of the fifty-two home-children had half-day play-school experiences five days a week, and spent the rest of the day at home with their mothers; nine children were taken care of by a day care mother in her home, and the remaining twenty-one children were reared exclusively at home by their own mothers. Most of the fifty center-children spent full-time in the day care center during their parents' working week.¹

Figure 2 compares center and non-center routines during the child's waking hours.

¹ Eight of the fifty children in the centers had mothers who worked 75%-time only. These children were usually picked up an hour or two earlier in the afternoon, providing them with an "extra" hour of play-time with their non-center peer-group at home.

Figure 2.
Daily Routines

Time of day	Child in Center	Child at Home with mother	Child in Day Care Mother's Home	Child at Home and in Play School
5:30 - 7:00 a.m.	Child wakes up or is awakened. Morning routines (dresses, washes, eats light meal).	Child sleeping	Child wakes up. Morning routines.	Child sleeping.
7:00 - 8:00 a.m.	Child leaves for center with mother or father.	Wakes up. Father off to work. Breakfast with mother and sibs.	Leaves for Day Care mother's home with father or mother.	Same as home with mother.
8:00 - 11:30 a.m.	Breakfast in center. Indoor play, Structured group- session (spec. topic discussed-traffic, nature, post office.)	Plays with sibs or peers indoors or outside. Mother cleans house, makes beds, washes dishes.	Plays with peers in neighborhood.	Same as home with mother.
11:30 - 12:30 p.m.	Naptime, teacher reads stories. Some children sleep.	Lunch. Relaxed indoor play.	Main meal. Indoor play	Lunch. Gets ready and leaves for play-school. Child usually walks alone to playschool.

Figure 2 (continued)

Time of day	Child in Center	Child at Home with Mother	Child in Day Care Mother's Home	Child at Home and in Play School
12:30 - 3:30 p.m.	Main meal. Play period, indoors or outside. Sometimes visits to public parks, library, etc.	Playtime with sibs or peers. Sometimes with mother + sibs shopping, walks, picnics, etc.	Play period with peers. Afternoon snack.	In Play School. Out-of-door play (15-20 children) Indoor play, unstructured activities. "Clean-up" time. Structured group-activities-spec. topics discussed.
3:30 - 5:00 p.m.	Afternoon snack. Indoor play-unstructured.	Afternoon snack. Indoor play. Mother prepares supper.	Picked up by parents, usually mother. Goes shopping with mother.	Walks home. Afternoon snack. Indoor play.
5:00 - 6:30 p.m.	Picked up by parents. Shopping with parent (usually mother) Father comes home. Children's TV.	Father comes home. Supper. Children's TV	Same as center child.	Same as Home with mother.
6:30 - 8:00 p.m.	Evening meal. TV. Bedtime routines. Goes to bed. Story read by mother or father. Falls asleep.	Bedtime routines. Same as center child, except goes to sleep later (8:00 - 9:00 p.m.)	Same as center child.	Same as home with mother.

Regardless of child care setting, a normal day in the life of a five and one-half year old is quite similar in terms of daily routines. Where differences occur, our protocols indicate that children in centers and family day care wake up earlier in the morning and go to bed earlier in the evening than children in home settings. Other differences worth noting are that center and play-school children have some kind of structured group-activities every day, that home children have more contacts with the surrounding adult world when they accompany their mothers shopping, sight-seeing, etc., and that center and family day care children have their main meal in the child care setting around noon, whereas the home children have their main meal in the later afternoon when the family is reunited.

Within-group variation with regard to mealtimes, naptimes, out-of-door play, etc., is considerably bigger in the home groups than in center group, suggesting that there is a routine flexibility-rigidity continuum along which different childrearing settings fall. In the day care center a group of 15-18 children aged 5-7 years places demands on the staff-members whose work-schedules, including those of the kitchen-staff, do not permit flexible routines. A mother taking care of one or two children at home has considerably more freedom arranging the day.

Social Networks.

Information about each child's social network was collected through interviews with the parents. The parents were asked to identify adults and children with whom their child had regular contacts; i.e., relatives, adults and/or peers in the neighborhood, in the child care setting, etc.,

and to specify frequency of contacts, sex and age of the persons included. Since our social interaction observations only covered parts of the week, mornings and afternoons during weekdays, this additional information was intended to give a more complete picture of the social worlds of the children. The data are not content-related, but rather speak to the issue of social opportunities. If we want to know more about what the children were actually doing when they were interacting with adults and peers, we have to turn to the daily routines and the observation data for information.

Social contacts were grouped into five different categories. For each category the frequency, the sex of the contact and whether that person was an adult or a child, were registered. The five categories were (A) Nuclear family, (B) Relatives, (C) Persons in neighborhood, (D) Persons in child care setting, and (E) Persons outside of the A-D (part-time play-school included) (Mitchell, 1969).

Each child's social network was then mapped and three groups were created based on the frequency and the number of different categories of contacts. Thirty-three children were placed in the High Frequency/Variety group (HF), forty-five in the Medium group (MF), and twenty-three children in the Low Frequency/Variety group (LF).² The people in the day care center (adults and peers) have been excluded here; they will be included in the discussion following Table 6. Had we, at this point, added 16 peers and 3 adults to the center child's

² A system of weighting was used to calculate frequencies. Each contact was given a score based on how frequently the child was in contact with that person (more than once a week = 3; once a week - more than once a month = 2; once a month - more than once a quarter = 1). A variety score based on number of categories represented in the child's network (1-5) was added to the sum of these weighted frequencies, before the three groups were created based on the total scores.

network we would have had obscured important information regarding the impact of day care on the other social networks of the center children.

It is clear that some children had very little variety in their social contacts while others were surrounded with familiar adults and peers.³ Table 6 presents this analysis:

Table 6.

Social Networks Analysis - High vs. Low Frequency/Variety of Contacts.

High Frequency/Variety (33) Low Frequency/Variety (23)

Number of parents	Two parents One parent				Two parents One parent			
	Type of housing		Type of housing		Type of housing		Type of housing	
	Villa	Apt.	Villa	Apt.	Villa	Apt.	Villa	Apt.
HOME (27)	20	3	0	1	1	1	0	1
CENTER (29)	4	5	0	0	1	7	1	11

It is quite clear from Table 6 that the type of housing and the physical design of the neighborhood is associated with opportunities for social contact. Children who lived with their parents in private homes (villas/row-houses) were considerably more often found in the HF-group than the LF-group, the reverse being true for children who lived

³ Appendix 9 includes two examples of social networks; the first one shows the social network of a boy in the HF-group, the second gives us information about contacts available to a girl in the LF-group.

in apartment buildings. Since income to a large extent determines who lives where (private homes are more expensive) it is easy to understand why single-parent families often are found in apartments and their children often in the LF network group.

For single parent children the day care centers provided many children with a stable group of peers and adults with which to interact, an opportunity they might not have had if they had spent their days at home with their single mother in an urban or suburban apartment complex.

To help the reader understand our HF and LF network-types, what social opportunities they are made up of and how they differ, we are including here four network descriptions representing four separate "types" of networks. Since the child's social network can't be fully understood without knowledge about the "family network" we went back to ten families for additional information regarding the social contacts of the parents. The four interviews included here are not to be seen as statistical generalizations but rather as illustrative examples:

1. (LF-Home)

Peter lives with his mother Anne and his four-year-old brother Bob in a three-room flat on the seventh floor of a suburban apartment building. Anne was divorced two years ago. She has tried without success to find places in a day care center for her sons, so she has had to stay home and take care of them herself, working only part-time two evenings per week, when grandma babysits. The family has moved three times during the past two years.

Peter's peer-contacts are limited to his brother and a seven-year-old cousin, plus occasional contacts with a few children whose mothers are friends with Anne. On the adult side Peter sees his father once a month or less. Grandma is a stable adult-contact since she lives quite close to Peter, and she is also a frequently-used babysitter. Other than that Peter meets his mother's friends (four women) now and then, usually around shopping or coffee.

Anne describes her situation like this:

"I don't have any contacts in the neighborhood. We haven't lived here very long and there is nothing to do here. I want to start working, I used to work in a store, but I can't find good child care. My mother has promised to take care of the kids if I can find a day-time job, so I'll try. All my relatives, except my mother, live in Belgium, so we only meet once a year. I do have a few friends whom I meet twice a month or so, usually just to chat and have coffee. They have kids so these meetings are high-points for Peter and Bob. And then there is the summer-house at the coast that we rent for a month every summer, that's a relief for sure!! Peter has two friends there so he loves it when we move out there in June. Otherwise our normal week-day is quite boring, both for me and for the kids!"

2. (HF-Center)

Johanna lives with her mother Lena, her father Ingemar, and her brother Bo, who is 2 years younger, in a five-room apartment in a suburban neighborhood. The family has lived here since Johanna was born and she has spent her weekdays in a nearby day care center, where she started at the age of 6 months. Lena is a pre-school teacher caring for 5-7 year olds. She moved recently to a different center than Johanna's since "it's difficult to have your own child in your group". Bo has a place in the same center as Johanna. Ingemar used to work in a hospital but changed to a job at the Volvo Car factory

two years ago, since "working day-time gives me more time for the family, and because of my political involvement this new job is quite stimulating."

The family has close contacts with two other families in the neighborhood, families who have pre-school children. "We meet 2-3 times per week, with or without the kids." A "neighborhood group" was formed a year ago to participate in the decision-making around the physical design of the area and leisure-time activities for adults and children, etc. Lena is the ombudsman for this group, "So I know most of the people in the neighborhood, which is nice." Both parents have a variety of interests and the children are joining them regularly, jazz-ballet, folk-dance, swimming and the neighborhood group are on Lena's activity list; Ingemar has soccer, bowling and political work as his main interests.

The family has a stable group of relatives whom they meet with on a regular basis, usually with the children. Relatives include grandfather, grandmother, and six brothers and sisters, five of whom are married and have young children. In the summer they rent a summer-house with Ingemar's sister and her husband, and the two families spend a lot of time there together.

Johanna has eight close friends in the neighborhood, both boys and girls, and seventeen playmates in the center. If her 18 cousins are added to this list the picture of a large and varied social network emerges, especially since the adult-side is well represented.

Lena:

"I really like my job, and all the contacts I have with people in various situations. And I think it's very important for

Johanna and Bo to learn to function together with different people of different ages and backgrounds."

Ingemar:

"I think the day care center is very important for the kids. The fact that they learn to function well in groups, to enjoy being in groups. Parents who can share their child rearing responsibilities with the center staff will have more time and energy for their working roles and their roles as active members of society. When they get this opportunity they will also be more confident in their parental roles which will be of value to all family members, the children included."

3. (LF-Center)

Maria and her mother Gunilla live in a downtown, two-room apartment in an older ten-family building. Gunilla works four days/week and Maria has a place in a nearby day care center. This center is small, Maria's group consists of ten children.

Gunilla:

"Maria is in center care mainly for financial reasons, but even if I had had the money I would have preferred to work rather than staying home. I don't know any of the other parents with children in the center, but I have a good relationship with the staff members. One good thing about this center is that the children take part in the 'adult world' in that they help cleaning, cooking, fixing things, etc. This is an exception as far as I know. Maria has two friends in the neighborhood with whom she plays regularly, but other than that no child contacts. That's why the center is so important, I think."

Maria's adult world revolves around her mother and the center staff, plus occasional meetings with her grandmother and her uncle. During the warm half of the year, weekends are usually spent at a summer-house where the neighbors have two children for Maria to play with.

Gunilla:

"As you can see, this is quite a well-defined social life for Maria (and myself). I have my work and Maria has her day care center during the first four days of the week. Fridays are

cleaning-up and shopping days (Maria usually plays with a friend outside, at home) and then it's the summer-house or supper with my mother or brother weekends. I also should add that I have a friend, Karin, and the two of us usually go out dancing once a month. We call this 'the fun of the month'!"

4. (HF-Home)

John is the oldest of three brothers living with their parents, Mona and Bengt, in a private five-room villa in the central part of Gothenburg. His mother is a teacher and the first two years of John's life she worked while Bengt, who was studying, stayed home to look after the child. When the second child was born Mona stopped working and she has been home since then. Bengt is now working as a real estate agent. Mona is also the family day care mother of two pre-school children in the neighborhood, so during the day she has five children to look after.

In this neighborhood most families know each other fairly well and meet regularly with or without children. John has 10-12 playmates, and the children in the area are running in and out of each other's houses all the time. This "open door"-atmosphere has led to a feeling of joint responsibility among the parents and, as Lena puts it, "it's almost as if John and his brothers have 6 or 7 mothers available.... and two extra grandparents, our neighbors next door are retired and have no kids, so that's a place where children are very well received!"

John is attending the half-day play-school every morning between 9-12 and so do most of his peers.

Lena:

"I think it's very important that they have this more structured group experience with adults around. What they really learn

is considerateness and cooperation. There is a noticeable improvement in the way the kids play around the house in the afternoons, now when they have had this group training. Mobbing and teasing have almost disappeared."

In the summer the family spends a lot of time sailing off the west coast. There is a group of seven families who sail together during weekends and vacations. These families contribute five same-aged peers to John's social network. At the summer-house, where the family lives three weeks in the summer and weekends during spring and fall, John also has friends, two five-year-old boys, so opportunities for social interaction seem to be everywhere.

CHAPTER V

RESULTS: Observational Data

The information needed to describe and compare social interaction patterns was collected by observations in the homes and centers. Our instrument, the Social Interaction Scale, and measurement procedures were described in Chapter 3 and Appendix 1.

In analyzing the data we have focused on the settings in which our children were being observed, whether the observed child was a boy or a girl, and whether the child was interacting with an adult or a peer.

The results are presented under two main headings, amount and types of interactions, in an attempt to answer the questions: (1) "How much social interaction were the children engaged in?" and (2) "What kinds of social behaviors were displayed?"

Amounts of Social Interaction

A basic distinction which will be made throughout the presentation of our results is that between interactions with adults and with peers. As far as adults are concerned, children in the homes were observed interacting with their mothers or, in some instances, with a day care mother or a pre-school teacher in the play-school. Children in the day care centers were observed interacting with the center caregivers (99% of whom were women).

For the home children a peer was either a sibling or a playmate in the neighborhood or in the play-school; for the center children a peer was always a child from the center group.

Table 7 shows (in percentage of observed time) how much time the children in the two groups spent in social interactions (Total column) and how this time was distributed between adults and peers.

Table 7.
Amounts of Social Interactions with Adults
and Peers (in percentage of total observed time)

	Adults	Peers	Total
Center (48)	8.9	25.6	34.5
Home (50)	10.5	17.7	28.2

This table demonstrates that the children interacted more with peers than with adults both in the homes and in the centers.

When these data are examined separately for each sex, Table 8 shows that most of the difference in social interaction were differences between boys in the two settings.

A 2 x 2 (setting by sex) Anova was performed, followed by a t test where there was a significant F. All reported significance levels are .05 or less. (For ANOVAS, see Appendix 11)

Table 8.

Amount of Social Interaction with Adults and Peers
by Sex (average amount of time per child in seconds
and percentage of observed time).

		CENTER		HOME		ANOVA
		Boys	Girls	Boys	Girls	
Adults	secs.	259.0 ^a	387.8	361.9	427.7	(sex) F:4.168 (p < .05)
	%	7.0	10.8	10.1	11.9	
Peers	secs.	1137.9 ^{ab}	791.1	630.4	191.9	(Setting/sex) F:5.070 (p < .05)
	%	31.6	22.0	17.5	19.2	

^a significant setting difference within sex

^b significant sex differences within setting

Boys observed in the centers interacted less with adults and much more with peers than did boys in the home settings, while with girls the interaction patterns were quite similar in the two settings.

Types of Social Interaction

Different types of interaction were observed. These different types of social behaviors were recorded in categories described in detail in Appendix 1.

Here is presented information about the children's social behaviors when interacting with adults, followed by an analysis of the children's interactions with peers. The third set of findings from the Social Interaction Scale focuses on the behaviors of the adults and the peers (the "object persons") in their interaction with the children we observed.

Children's Social Interaction with Adults.

Table 9 shows the amount of time (average amount per child) boys and girls were engaged in five main types of social interaction with the adult social world. These five categories (left column) accounted for more than 80% of all social interaction types in which the 98 children in both center and home settings were engaged. (For a full description of how the interactions were distributed across all interaction types, see Appendix 11).

Before examining statistical relationships, let us first take a look at what kinds of social behaviors the five categories represent. As Table 9 shows, the type of child-adult interaction that accounted for most of the time in both settings found the child complying with adult suggestions, requests, or commands. Here are two typical situations from our observation protocols:

1. (center)

"Anders comes charging in through the door after having been outside playing. He is stopped by Lena's (adult) voice, calling: 'Take off your shoes, or you'll make a mess of the floor'. Anders kicks off his shoes, picks them up and continues to the clothes-changing room."

2. (home)

"Anna is on her way in after having played in the backyard. Her mother leans out of the window and calls at her: 'Anna, go back and see if you can find Jesper's cap at the jungle-gym!' Anna runs back and finds the cap."

The children also spent a large amount of their time with adults in small talk, listening, and conversing (Information sharing);

3. (center)

"Kerstin (adult) and Johanna are sitting on the steps. Johanna talks about her grandfather and what she did the previous day at his summerhouse. Kerstin is listening

and adding a question now and then. '...and when he got back from the kiosk he brought me a huge ice-cream, my grandpa is very rich, and then a seagull got what was left of the cone...'

4. (home)

"Jonas points at something flying in the air: 'What's that?' 'It's a kite that you get up there with a string', says his mother, 'you run fast, pull the string and up it goes.'"

Situations where the children initiated contacts with adults in order to receive help in one way or another (Use of adult as social resource) were a third type which accounted for a relatively large amount of the interaction time:

5. (center)

"Outdoor play. Yvonne (adult) is sitting on a bench engaged in a conversation with Martin, who has his right arm in a plaster-cast and is taking it easy today. Karin comes running: 'You have to help me with this zipper, there is sand in it, and I can't get it open'. Yvonne turns to Karin, pulls the zipper a few times, blows on it, 'there now it works again.' 'Thanks', says Karin and is off."

6. (home)

"Eva (from her room): 'Mamma, where is the book about Lotta?' 'Look where we read it last night!' Eva finds her book on the couch in the livingroom."

Two other types of social interaction warrant inclusion; namely, situations in which the child and the adult were engaged in cooperative activity and situations where the child expressed warm affectionate feeling for the adult (Positive affect). One example from each of these categories follows:

7. (center)

"Clean-up time. Anna has put books in a box, but since it is heavy she suggests to Monica (adult) that the two of them carry it out to the 'cozy-room' where it belongs. Monica grabs hold of one end of the carton and they carry it together."

8. (home)

"Tinna is sitting on the steps at her day-mother's house, making drawings in the sand. She looks up and sees her father, who has come to pick her up. Tinna gets up, runs up to her father, gives him a big hug and says smilingly: 'I have been waiting for you.' Her father lifts her up and the two laugh together."

A 2 x 2 (setting by sex) Anova was performed followed by a t test where there was a significant F . All reported significance levels are .05 or less (For ANOVAS, see Appendix 11)

Table 9.

Main Types of Social Interactions with Adults by Setting and Sex (average amount and percentage of interaction per child).

		CENTER		HOME		ANOVA
		Boys	Girls	Boys	Girls	
Use of adult as social resource	secs.	19.8 ^{ab}	61.1	66.6	33.8	(Sex/setting) F:6.732 ($p < .05$)
	%	7.6	15.8	18.4	7.9	
Information sharing	secs.	84.3	88.0	127.2	116.9	(setting) F:4.271 ($p < .05$)
	%	32.5	22.7	35.1	27.3	
Compliance	secs.	78.3	123.1	77.2	179.6	(sex) F:4.625 ($p < .05$)
	%	30.2	31.7	21.3	42.0	
Positive affect	secs.	2.1	2.8	6.4	59.6	n.s.
	%	0.8	0.7	1.8	13.9	
Cooperative behaviors	secs.	15.2	74.1 ^a	16.5	0.0	n.s.
	%	5.9	19.1	4.5	0.0	

^a significant setting difference within sex.

^b significant sex difference within setting.

If we look closely at Table 9 we find that adult-child interaction patterns were similar in many respects in the homes and in the centers. Where differences occurred they were found in situations involving

information sharing and cooperative behaviors. Children and adults at home were more often engaged in small talk and the sharing of information than were children and adults in the centers. More adult-child cooperation occurred in the centers than in the homes.

Setting-related within-sex differences were found for boys in the use of adults as social resources (p less than 0.001) and in information sharing (p less than 0.07). The analysis of variance revealed a strong sex/setting interaction effect for the former of these interaction types, a fact which should be kept in mind during the discussion which follows in Chapter 7. Boys in the homes were more often engaged in these kinds of interaction than were boys in the centers. Girls at home were often found interacting with adults in situations involving compliance, information sharing, and positive affect. Center girls, although engaged in considerable amounts of compliance and information sharing situations, were also found interacting with their caregivers in cooperative activities and in situations where the caregivers were used as social resources. Setting-differences for girls are trends failing to reach a critical level of significance except in the area of cooperative activities (p less than 0.03).

Between-sex differences were most noticeable in the compliance area, an interaction type which occurred twice as much among girls as among boys. The differences in the amount of these interaction

types seems to account for the differences in the amount of over-all adult-child interaction that were observed in Table 8 (pg. 68). Girls in the centers made use of adults as social resources significantly more than boys in the centers, whereas, the reverse tended to be true at home.

Children's Social Interaction with Peers.

We now turn to our children's social behaviors in interactions with other children. Seven of the fifteen interaction categories into which the Social Interaction Scale was divided accounted for 90 percent of all child-child interactions. These seven interaction types are listed in the left column of Table 10 and the information is, as above, broken down by setting and sex.

Table 10 is preceded by several examples from our protocols of those interactions that appear in the table to give the reader a clearer picture of what kinds of social behaviors the various categories represent.

As Table 10 indicates, cooperation and information sharing, accounted for the vast majority of all recorded interactions:

1. Cooperative behaviors - (center)

"Göran and Tommy are heading for the swings. Göran: 'If we both swing together on the same swing we can really go fast!' - 'Yeah, let's do that', says Tommy. The two boys swing together, laughing and shouting."

2. Information sharing - (center)

"Simon catches sight of Jonas, who is carrying an air-pump. 'What's that?' asks Simon. 'It's a pump, and if one goes like this (demonstrates) one can inflate balloons with it', says Jonas. Both boys try it."

Interactions involving compliance, role play, positive control, and conflict also occurred often enough to deserve examples:

3. Compliance - (center)

"Annika has climbed up to the ceiling on the gym-ladder, and calls to Eva: 'Could you throw me that ball?' Eva grabs the red ball and climbs up to Annika with it."

4. Role Play - (home)

"Bodil is a store-keeper and shouts for customers to come and buy fish. 'Yes this flounder costs ten crowns. Very fine.' Helen (cracked voice): 'Yes, it looks fine (giggle)'."

5. Positive Control - (center)

"Jorgen is sitting in the sand-box constructing roads and bridges for his cars. Martin and Fredrik come over and Jorgen says: 'Remove those sandals, I'm going to make a parking-lot there.' Martin moves the shoes and shows signs of wanting to participate in Jorgen's activities."

6. Conflict - (home)

"Andreas and Niklas are running up to the tricycle starting to pull at different directions. 'I want it!' - 'No, I'm going to use it now!' Andreas snatches the bike away from Niklas whose lower lip starts to tremble and he walks away to the swings."

Table 10.

Main Types of Social Interaction with Peers by Setting and Sex
(average amount and percentage of interaction per child).

		CENTER		HOME		ANOVAS
		Boys	Girls	Boys	Girls	
Information sharing	secs.	293.3 ^{ab}	171.5	164.1 ^a	112.3	(setting) F:7.421 (sex) F:9.639 (p < .05)
	%	25.8	21.7	26.0	16.2	
Positive control	secs.	55.2	60.7	58.2	75.4	n.s.
	%	4.9	7.7	9.2	10.9	
Compliance	secs.	98.6 ^a	73.0	40.8	53.5	(setting) F:5.552 (p < .05)
	%	8.7	9.2	6.4	7.7	
Imitation	secs.	7.9	13.5	3.0	39.2	n.s.
	%	0.7	1.7	0.5	5.7	
Role Play	secs.	36.9	96.3	16.9	135.8	(sex) F:9.302 (p < .05)
	%	3.2	12.2	2.7	19.6	
Conflict	secs.	17.4	10.7	28.6	15.4	n.s.
	%	1.5	1.4	4.5	2.2	
Cooperative behaviors	secs.	491.0 ^a	298.5	231.9	208.5	(setting) F:6.650 (p < .05)
	%	43.1	37.7	36.8	30.1	

^a significant setting difference within sex.

^b significant sex difference within setting.

A 2 x 2 (setting by sex) Anova was performed followed by a t-test where there was a significant F. All reported significance levels are .05 or less (for ANOVAS, see Appendix 11). We saw from Table 8 that there were more child-peer interactions in the centers than in the homes. This was especially true for boys in the centers, who were found engaged in social activities with members of their peer-group substantially

more often than boys at home or girls in either of the settings. Table 10 shows that these differences in the amount of child-peer interaction were the result mainly of more cooperative activity and small talk in the centers. The patterns are similar for both sexes but the differences are more pronounced for boys than for girls. These results give us a more detailed picture of the social circumstances in which differences occur. Center boys were more likely than boys in the homes or girls in either setting to be engaged in cooperative activity and information sharing often in "adult-free" activities like playing football, constructing car-tracks, and playing "police and thieves".

Girls and boys also differed in the amount of imitation and role play in which they were engaged. The girls displayed more of these types of behaviors than the boys and, it is worth noting, the differences between boys and girls were more pronounced in the homes than in the centers. The sex differences in role-play and imitation are trends, failing to reach a critical level of significance. (See Appendix 11 for significant ANOVA, Main effect for sex.)

Finally, open conflict, which was not observed very often, tended to occur more in the homes than in the centers, a finding which is contrary to prediction. Boys were in conflict more often than girls, but this difference is not statistically significant.

Adult Behaviors in Social Interaction Situations.

The observer, in using the Social Interaction Scale, also recorded the behavior of the adult or peer who was engaged in social interaction with the target child. The instrument distinguished among eleven

separate behaviors, called "interaction techniques" (see Appendix 1).

Table 11 shows how the caregivers in the homes and in the centers made use of these techniques (percentages).

Table 11.

Social Behaviors of Adults in two Settings,
in Interaction with Observed Children (percentages)^a

	CENTER	HOME
Teaching	22	27
Small Talk	16	19
Do's and Don'ts	34	29
Positive reinforcement	6	7
Negative reinforcement	1	2
Helping	19	14
Total	98%	98%

^a Three techniques with low percentages were not included (distraction, refusing help, ignoring).

As Table 11 indicates, mothers and center caregivers often requested, commanded ("do that", "give me this", "don't forget to....") or used teaching techniques in their interactions with the children. Small talk and various sorts of helping also occurred a significant amount of the time. The patterns were similar in the two settings but it might be worth pointing out that adults at home tended to use more

direct instruction (teaching) than the center caregivers, who more often tended to help the children to find the solution to a problem themselves, rather than presenting ready-made solutions.

The Use of "Justification"

One technique, "justification" does not appear in Table 11, since it was always, if present, double-coded with "Do's" or "Don'ts". This technique was used by caregivers who not only requested or commanded, but also justified their requests or commands by telling the child why they wanted certain things to happen. The center caregivers justified their requests 70% of the time, whereas the corresponding percentage for adults in the homes was 55%. This difference is significant at the .05 level. (Chi square: 5.47).

Peer Behaviors in Social Interaction Situations.

Peer behavior in social interaction with the target child was also recorded. Table 12 shows how the peers in the homes and in the centers made use of the various "interaction techniques".

Table 12 is striking for the similarity displayed by the two groups of children. The behavior of the peers in a social interaction situation is most often to join in and assist/help/share, or to engage in a brief, neutral conversation (Small Talk).

Table 12.
Social Behaviors of Peers in Interactions with
Observed Children (percentages)^a

	Center	Home
Teaching	10	9
Small Talk	23	23
Do's and Don'ts	10	10
Positive reinforcement	4	4
Negative reinforcement	3	4
Helping/Sharing	49	49
Total	99%	99%

^a Three techniques with low percentages were not included (distraction, refusing help, ignoring).

The Use of "Justification".

We also looked at the percentage of "justified" vs. "unjustified" commands and requests made by the peers. The result of this analysis showed that center peers justified their requests 25% of the time, while peers in the home settings did so only 9% of the time.¹ The difference is significant at the .01 level (Chi square: 7.33).

Adult Behaviors in Social Interaction with Boys vs. Girls.

We finally proceed to look at adult behaviors in relation to sex of the child as it was represented by the different interaction techniques. Table 13 presents the results of this analysis (percentages).

¹ There was considerably more variation in age among peers in the home settings than in the center settings.

Table 13.
Social Behaviors of Adults in Interaction with
Boys vs. Girls (percentages)^a

	CENTER		HOME	
	Boys	Girls	Boys	Girls
Teaching	25	21	28	22
Small talk	21	13	21	14
Do's and Don'ts	31	34	24	40
Positive reinf.	2	9	4	17
Negative reinf.	4	1	3	0
Helping	16	22	18	6
Total	99%	100%	98%	99%

^a Three techniques with low percentages were not included (distraction, refusing help, ignoring)

This table does not change the picture created earlier showing that mothers and center caregivers distributed their interaction techniques mainly across requesting, teaching, small talk, and various sorts of helping. What the table contributes is a better understanding of differences in adult behavior in interactions with girls vs. boys. There is a tendency for adults in both settings to use more teaching and small talk in their interactions with boys, and more requesting, and commanding in their interactions with girls. The most noticeable differences are found in the different use of reinforcing techniques.

Adults tended to use positive reinforcement more often in interactions with girls than with boys especially in the homes, and negative reinforcement more in interactions with boys than with girls.

The use of "justifications".

We noticed in Table 13 that adults in the centers and in the homes spent more time requesting and commanding in interactions with girls than boys. The percentage of justification used in connection with these techniques ("Put on your hat, or you'll catch a cold") are shown in Table 14.

Table 14.
The Use of "Justification" by Adults in Interaction
with Boys vs. Girls (percentages)

	CENTER		HOME	
	Boys	Girls	Boys	Girls
Justified "Do's and Don'ts"	59	71	41	72
Unjustified "Do's and Don'ts"	41	29	59	28
Total	100%	100%	100%	100%

Adults in the homes and in the centers were justifying more than seven out of ten requests in interactions with girls. The corresponding percentages in interactions with boys were six out of ten in the centers and only four out of ten in the homes.

Sex-related differences in use of justification by the adults are statistically significant at the .05 level in the homes (chi square: 5.40). In the centers the difference does not reach a critical level of significance. There is a noticeable, although statistically non-significant, setting-related difference in interactions with boys, whereas the pattern is identical in interactions with girls.

This concludes our presentation of findings related to the Social Interaction Scale. In chapter six we proceed to look at the results of testings with the Griffiths Mental Development Scale and the doll play dilemma intended to measure adult vs. peer orientations.

CHAPTER VI

RESULTS: Developmental Data

This chapter presents two different kinds of results; namely, the results of the testings with the Griffiths Mental Development Scale, and the results of the Doll Play Dilemmas designed to measure adult vs. peer orientation. (For a description of the measurements and procedures, see chapter 3, pp. 28-45.

Griffiths Mental Development Scale.

Table 15 presents the mean overall scores and standard deviations for the three groups of children (General Quotient - GQ).

Table 15.
Mean Overall Scores and Standard Deviations on the
Griffiths Mental Development Scale.

	CENTER (n:33)	HOME (n:34)	MIX (n:34)	ANOVA ^a
GQ-TOTAL	119.4	115.7	113.8	n.s.
Std. Dev.	10.4	9.9	11.2	

^a For ANOVA, see Appendix 11.

No significant differences were found among the three groups on the overall scores of mental development (GQ), a finding which is in accordance with our predictions.

Because of the uneven distribution of boys and girls in the center and the home groups (pg. 53), we then proceeded to analyze these two groups by sex. (The rationale for not including the mixed group in further analyses can be found on page 40). A one-way Anova was performed for the overall score and the six subscales respectively. Where there was a significant F , Scheffe's mean test was performed on the four means generated in relation to the total scores and subscale scores. All reported significance levels are .05 or less. (For ANOVAS, see Appendix 11)

Table 16 shows that, although both boys and girls perform well above the norm (British standardization; mean score: 100), girls are doing better than boys regardless of setting. The scores are significantly different for Total GQ, and for the subscales related to the development of Personal-Social, Hearing and Speech, and Eye and Hand Coordination. (Scheffe's mean test).

Looking at setting effects (holding sex constant), we find that center boys score significantly higher than home boys on the Personal-Social subscale, and that center girls score significantly higher than home girls on the Eye and Hand Coordination subscale. (A description of the items included in each subscale can be found in Appendix 3.)

Table 16.

Mean Scores and Standard Deviations on the Griffiths Mental Development Scale by Setting and Sex - Overall and by Subscales.

	CENTER		HOME	
	Boys (15)	Girls (18)	Boys (24)	Girls (10)
GQ - TOTAL	116 ^b	122	114 ^b	120
Std. Dev.	10.0	10.2	9.2	10.8
Locomotor	120	123	124	126
Std. Dev.	11.6	15.9	9.0	17.5
Personal-Social	115 ^{ab}	120	106 ^b	118
Std. Dev.	15.8	12.6	15.0	6.8
Hearing and Speech	124 ^b	131	124 ^b	129
Std. Dev.	11.0	11.6	15.8	11.5
Eye and Hand Coordination	111 ^b	122 ^a	109 ^b	117
Std. Dev.	13.1	11.2	11.0	12.1
Performance	113	117	111	119
Std. Dev.	17.8	18.7	18.8	19.4
Practical Reasoning	114	118	110	112
Std. Dev.	16.8	16.0	16.8	10.7

^a significant setting different within sex.

^b significant sex different within setting.

"Number of Parents" as a possible confounding factor.

We have earlier described the ways in which the characteristics of the families have changed since phase one of this study (Chapter 4, pp. 46-65).

Our finding that children in center care were more likely than children in home care to have only one parent in the home led us to a

further examination of the Griffiths scores, in an attempt to find out if there were differences in test-scores between children from one-parent families and children from two-parent families. Our analysis revealed no significant differences, although the tendency was for center boys with only one parent to perform less well than center boys with two parents or center girls with one or two parents. Mean scores and result of t-test is included in Appendix 12.

Doll Play Dilemmas

In an effort to try to understand the relative influence that adult and peer norms might have on the behaviors of our children, we presented the children with several Doll Play Dilemmas (pp. 32-35). We had predicted that peer pressure would have more influence over the actions of center than home children, while home children would comply more readily with the requests of adults.

Table 17 presents the responses of the children in the center and the home groups to these dilemmas.

The results in Table 17 do not support our prediction. Children in both groups had the doll child disobey the parent more than not, and this tendency was even somewhat greater for the home children than for the center children, as Table 18 shows.

Table 17.

Children's Responses to Doll Play Dilemmas.

Dilemma No.			
1. (Scissors)	Breaks adult rule	Does not break rule	No response
Home (35)	19	15	1
Center (33)	18	11	4
Chi square: n.s.			
2. (Apple-tree)	Breaks adult rule	Does not break rule	No response
Home (35)	22	12	1
Center (33)	16	13	4
Chi square: n.s.			
3. (Fence)	Does not follow adult	Follows adult	No response
Home (35)	12	22	1
Center (33)	11	18	4
Chi square: n.s.			
4. (Cookies)	Does not follow adult	Follows adult	No response
Home (35)	19	15	1
Center (33)	14	15	4
Chi square: n.s.			
5. (Play-house)	Does not follow adult	Follows adult	No response
Home (35)	22	12	1
Center (33)	20	8	5
Chi square: n.s.			
6. (Baby-sitter)	Does not follow adult	Follows adult	No response
Home (35)	19	15	1
Center (33)	10	18	5
Chi square: n.s.			

Table 18.

Children's Responses to Doll Play Dilemmas -Pooled Percentages.

Dilemmas 1-6 (pooled percentages)	Does not follow adult	Follows Adult
Home	56%	44%
Center	52%	48%

Further analyses of the children's responses to the Doll Play Dilemmas failed to reveal any significant differences. Neither sex of the child nor number of parents in the home seemed to affect the ways our children reacted to the stories (Statistical tables are included in Appendix 10).

We then proceeded to analyze parental responses to a selected number of statements (about "authoritarian" vs. "democratic" child rearing ideologies) from our Attitude Questionnaire (see Appendix 6)¹. Based on the responses, each parent was given a score, high for "authoritarian" - low for "democratic". These scores were correlated with the children's responses to the dilemmas (high for compliant/adult-oriented responses-- low for non-compliant/peer-oriented responses). Our prediction was that children whose parents scored high on the statements ("authoritarian" parents) would be more likely to have the doll obey parent.

¹ The analysis included items 9,17,19,20,25, and 26 in the Questionnaire.

This prediction was not supported by the outcome of the analysis; we found no correlation between parental child rearing attitudes and the children's responses to the Doll Play Dilemmas ($r = -0.147$).

CHAPTER VII

DISCUSSION OF FINDINGS

This chapter is divided into sections corresponding with those in the three result chapters (4-6). Each section begins with a summary of the pertinent results and is followed by a discussion of them. These discussions relate findings to previous research and to the underlying hypotheses guiding this follow-up study.

Final sections present a consideration of the limitations in this study and proposals for future research.¹

Family Characteristics.

The two groups of families who entered this study when the children were one year old were carefully matched with each other at that time to make the groups maximally comparable. Even parental attitudes toward the day care center and toward the maternal role was taken into consideration through the selection of "home families" from center waiting lists. But four years passed between the first and second phases of the study, and during this period the lives of the children and their families

¹ Those differences which have proven to be statistically significant are underlined, and when no underlining appears the results are to be seen as trends and treated accordingly by the reader.

underwent considerable changes with regard to factors like family size, housing arrangements and child care arrangements. Our findings made clear that these changes were not random; an intricate web of factors affected the families differently. Important family decisions regarding the work situation for the parents, whether or not to have a second child, and whether or not to move to a different neighborhood and maybe buy a private house, affected the opportunities for supplementary child care, as also did available day care places. Locus of control was important; the question became, for many families, one of free versus forced choices.

While different factors may have played a predominant role in the life of each individual family, our groups differed systematically on four variables when this follow-up began: Children in center care were more likely than home children to have only one parent in the home. They were also more likely not to have brothers and sisters, and more likely to live in apartments than the home children who often had moved with their parents to suburban private homes. Surprisingly enough, we also found more girls than boys in the center sample and substantially more boys than girls in the home group at phase two, a finding which argued for the importance of including "sex of child" as a separate variable in the data analyses. We discussed earlier (Chapter 4) some of the possible reasons for these differences. Let us recapitulate what seemed to be the most important of these reasons:

- As many as 35 families have cared for their children at home throughout the period of this study, despite the fact that the children were placed on the waiting-lists at an early age. Four main types of explanations for this fact were given to us by the parents:

(1) administrative obstacles/lack of places, (2) part-time work does not qualify, (3) child sensitive to infections, and (4) waiting-list used only as an "insurance" (pg. 53).

- Single parents have until recently received highest priority for available places in the centers (pg. 49).
- With more than one child in the family, chances of finding substitute child care drops because of lack of places in the day care centers. Decisions to increase the size of the family in many cases also correlates with other family decisions, having to do with adult roles; i.e., the mother stops working and stays home to take care of the children (pg. 52).
- Movement to private homes correlates with the family's financial resources, and with the size of the family. For these, and other, reasons single-parent families and two-parent families with only one child, have tended to remain in relatively less expensive, and smaller, apartments.

These detected differences should be considered important contributions to the understanding of human development, rather than being looked upon as "scientifically inconvenient". It is the strength of the longitudinal design that those "changes over time" that are bound to occur are recognized and taken into consideration when outcome data are analyzed. All too often has research through "one-shot designs" failed to shed light on the actual circumstances prior to and after "the experiment", hence, leaving us with the almost impossible task of trying to figure out the truth behind available test-scores or context-free performances. Implicit in this line of reasoning is the notion that one has to look with suspicion on those longitudinal studies

where the participating families (children, neighborhoods) over long periods of time continue to be neatly comparable on a single variable at study. Nature did not create the word "confounding variable", Man did.

Social Interaction Patterns.

Observational data gathered with the Social Interaction Scale was used to test predictions generated at the settings and socialization practices levels.

Data from phase one of the study indicated that the home-reared children interacted more with adults than did the children in the centers. Recent studies focusing on social behaviors suggest that children with day care experience interact more with peers than do children reared at home (pp. 15-16).

Amount of Social Interaction.

Our initial analysis of the observational data indicated that our five-year-old children interacted more with peers than with adults both in the homes and in the centers. Moreover, in line with our prediction, more adult-child interaction was observed in the homes than in the centers, whereas the center children observed in the centers interacted more with peers than did the home children observed in the home settings. However, most of the difference in amount of social interaction were differences between boys in the two settings. Boys observed in the centers interacted less with adults and much more with peers than did boys in the home settings. With girls the interaction patterns were quite similar in the two settings.

Types of Social Interaction with Adults.

Five types of social interactions accounted for more than 80% of all adult-child interactions in both center and home settings. These five categories were (1) Use of adult as social resource, (2) Information sharing, (3) Compliance, (4) Positive affect, and (5) Cooperative behaviors. The differences in amount of interaction with adults that were observed for boys in the two settings were found in the use of adults as social resource and information sharing. Boys in the homes were engaged in more of these kinds of interactions than boys in the center. Girls at home were often found interacting with adults in situations involving compliance, information sharing, and positive affect. Center girls, although engaged in considerable amounts of compliance and information sharing, were also found interacting more than the home girls in cooperative activities and in situations where the caregivers were used as social resources.

Between-sex differences were most noticeable in the compliance area, an interaction type which occurred twice as much among girls as among boys. Girls in the centers made use of adults as social resources significantly more than boys in the centers, whereas the reverse tended to be true at home. This sex/setting interaction effect is important to keep in mind in the discussion that follows.

There are several possible explanations for the observed differences in interaction patterns between boys in the different environments. In order to be useful, an explanation must take into consideration both the fact that the adults present in both settings are almost exclusively women and the alternatives available to the children.

It seems reasonable to suggest that boys in the center, given the choice, are not as interested in the all-female adults as models, but prefer instead to engage in peer-oriented activities with same-sex peers, readily available in the day care center. In the homes, however, where peers might not always be present as an alternative, the boys are restricted to the only persons available, their mothers. If the sex of the caregiver did not matter, it would be reasonable to suggest that the girls would display the same proportions of adult and peer interactions as the boys did in the two settings. However, our data shows that, in fact, girls are spending as much time interacting with adults regardless of setting, and they were also found interacting with peers as much in the home setting as in the day care environment. Our data, therefore, suggests that sex of the caregiver is an important aspect of the child's social world in terms of social interaction patterns, and so too is the availability of peers.

Another, complementary, explanation of these interaction patterns is that boys and girls behave just the way the surrounding society expects them to behave: boys make use of the opportunities available to prove "strong and brave" and to compare themselves with the peer-group in these respects (wrestling, "police and robber", "jumping from the roof"). These activities do not invite adult participation to any large extent. Girls, on the other hand, are expected to be engaged in more peaceful, "creative" activities, in which the adults find it easier to participate (sewing, playing with dolls, threading beads).

The observed differences between boys and girls in types of interaction also support our discussion of the links between the female

roles in the homes and centers and adult-child interactions. The girls at home are following adult requests and suggestions (compliance) while participating in the daily household activities with which their mothers are pre-occupied. In the center the girls are more often engaged in cooperative activities with the caregivers or using the adults as resources in situations and activities which to a lesser extent than in the homes have to do with practical household tasks. That the girls, regardless of setting, are more compliant, and follow adult requests more than the boys are doing, is a natural function of the fact that they spend more time interacting with the adult world. The power balance, which is always present when the adults and children are engaged in interactions, is a factor that should not be overlooked when we try to explain the social behaviors observed.

Different sex-role related adult expectancies for boys and girls might help explain the observed differences between boys and girls in type of adult-child interaction in the homes. Our data lead us to suggest that the boys at home have more reasons to initiate contacts with adults than the girls have, since the mothers do not expect the boys to participate in the daily household activities. The boys are faced with the task of making the mothers stop cleaning (cooking, washing....) and instead help fix the flashlight (catch "Superman", mix the paint, take out the toy train....). Hence, our prediction that the home children more often would initiate interactions with adults (pg. 24) in order to obtain their goals, is supported only with respect to the boys. The girls at home are already involved in interactions with their mothers, who keep them busy with other, more "female" activities.

Types of social interaction with peers.

Seven types of social interactions accounted for more than 85% of the amount of child-child interactions (Table 10). Different types of cooperative activities made up a large percentage of the interaction time in both settings. A second major type was information sharing which accounted for 15-25% of time spent in interaction with peers. Other types of regularly occurring social behaviors were positive control through suggestions and requests and the corresponding reactions to peer suggestions (compliance). Some of the children were actively involved with imitation and role-play, and finally, a certain amount of open conflict was registered.

We stressed earlier the fact that more peer-interactions were observed in the day care center than in the home. These differences in amount of child-peer interaction were largely due to a considerably larger amount of cooperative behaviors and information sharing in the centers. Center boys were more likely than boys in the homes, and girls in either setting, to be engaged in cooperative activities and information sharing. They were also found complying with peers more than the home boys did. The girls displayed a larger amount of imitation and role-play behaviors than the boys did, a difference which was more pronounced in the homes than in the centers. Finally, open conflict tended to occur more in the homes than in the centers, and more among boys than among girls.

These findings support the notion that center boys prefer to be engaged in peer-oriented activities where (female) adults cannot easily participate, or voluntarily get engaged. Playing football and "chasing

robbers" are activities which to a large extent are structured and carried out by the boys themselves, and a frequent comment by the center caregivers was that "the boys are really good at finding things to do on their own. No need for us to get involved".

The sex-differences noticed in the imitation and role-play areas could be explained by the fact that the girls get impulses for these activities either through a direct imitation of what the adults are doing (cooking, washing dishes) or through the acting out of adult situations ("pretending to be a doctor and receive patients", "dress like a fish-salesman and sell flounders") because they always have female adult models available.

The tendency for more open conflict in the homes than in the centers was a finding contrary to our predictions. It is possible that the setting-related differences noticed are developmental; children in day care, and especially the boys, have experienced considerably more peer-interaction, and so might have developed earlier, various alternative ways of solving peer-conflicts.

Adult behaviors in social interaction situations.

Mothers and center caregivers used a lot of requesting, commanding, ("do that", "give me this", "don't forget to...") and teaching techniques in their interaction with the children. Small talk and various sorts of helping also accounted for large percentages. The patterns were similar in the two settings, although girls in the center received more direct help than girls at home because they requested more (more child-initiated interactions where adults were used as resources were

found among girls in the center than among girls at home). On the other hand, mothers at home tended more than the center caregivers to use suggestions and requests, coupled with positive reinforcement, in interaction with their daughters (which corresponds with the higher amount of "compliance" among girls at home). The physical set-up of the two settings (the center being designed specifically for children) as well as the ongoing activities within the settings (mothers at home perform several roles) are both factors contributing to our understanding of these observed differences in adult behaviors.

The most noticeable differences between caregiver behaviors were again related to sex of child: both in the homes and in the centers adults tended to use more positive reinforcement in interactions with girls, and more negative reinforcement in interactions with boys. The adults' use of justification also varied with the sex of the child: higher percentages of justification occurred in interactions with girls than in interactions with boys. These descriptions of adult behaviors help to clarify the picture of various adult-child interactions that emerged out of our content-analysis of the interactions. It seems quite clear that there are systematic differences in interaction patterns, especially among boys and girls in their interactions with adults but also as a result of a sex/setting interaction effect. Availability of peers, same-sex adult models, different adult expectations for boys vs. girls, and role-related adult-activities are all contributors to different social experiences for boys and girls. Whether to consider these differences to be for good or for bad depends on the general beliefs held by society and its individual

members: The Swedish Child Care Commission, seeing the day care center as a potential sex-role equalizer, states: (SOU 1972:27, p. 16).

"Children need to be allowed to identify with adults of both sexes to develop a complete personality. This puts demands on public day care. It is important to recruit male staff members to the day care center, not only because of personality development per se, but also as to counteract sex-role prejudices around child care as being a task specifically designated for women". Our data show, indeed, that with no men in the day care centers (and, of course not, in the homes!) homes and centers do not differ much in the way they assist in conserving old sex-role stereotypes. In this respect our data suggest that the center is offering the girls a somewhat different and less sex-role stereotyped set of activities than the homes are doing.

It is too early to tell what effects these differences in early social experiences might have for the boys and the girls as they grow older, with respect to variables like self-concept, ability to function in groups, sex-role perceptions and acquisition of social norms and values. Follow-up visits which will concentrate on these issues are planned as phases three, four, and five of this study.

Overall Development.

We had predicted that the center children and the home-reared children would not differ significantly on a test of mental development. This prediction turned out to be true, the children in the two groups performed equally well on the Griffiths Mental Development Scale. Our finding is in accordance with previous studies which have compared cognitive development of center and home-reared children (i.e.,

Schwartz et al, 1974; Winett et al, 1974; Fowler and Khan, 1974).

As with social activities, there were some marked sex-differences, however; girls performed significantly better than boys both overall and on most of the subscales, regardless of settings. It is reasonable to suggest (Bronfenbrenner, 1976) that active involvement in activities with adults enhances cognitive development in children. The girls in our sample were more involved with adults both in the center and at home and such involvement could account for their higher test scores. There is also a clear correspondence between the activities in which girls were engaged and some of the test items (rope-skipping, dressing, drawing figures, threading beads, doing puzzles) which might explain some of the differences in performance.

The finding that five-year-old girls perform better than five-year-old boys on a developmental scale including fine-motor and verbal subscales is not in itself an addition to existing knowledge about child development (Maccoby and Masters, 1976). What this study shows, which has not been reported in previous research, is that these sex-differences persist also when the child care environments are varied.

Where differences did occur by setting (subscales only) they were in favor of the center children. Center boys performed better on personal-social tasks (dressing, setting table, etc.) than boys at home, maybe because boys at home are not expected to manage these tasks to the same extent as girls in the homes. Boys in the centers have access to same-aged models with which to compare themselves, and they also have to learn to take care of themselves in routine situations (dressing, undressing, eating) to facilitate the work of the caregivers, who might have fifteen children to attend to at the same time.

Center girls performed better than home girls on fine motor tasks, perhaps because they had more opportunities than home girls to practice, and were reinforced more when they practiced, drawing and writing. These activities are less central in the homes where household work takes up most of the time of the mothers.

It is worth pointing out that when "number of parents" was held constant in our sub-analysis of the developmental data, there was a strong tendency for center boys with only one parent at home to perform less well than center boys with two parents or center girls with one or two parents. Lacking observational data on social interaction patterns and activities in the homes of the center children, we can only speculate as to the reasons for this difference. Maybe single mothers with pre-school age boys find it harder to meet the needs of their sons, whose heavily peer-oriented activities in the center during day-time are not counterbalanced with cognitively stimulating adult-interactions at home evenings and weekends because of the absence of a same-sex identification object, the father.

Adult vs. Peer Orientation.

Based on our data from phase one, we had predicted that center children would be more influenced by peer demands than home children, while the reverse would be true with adult demands.

Statistical analyses of the responses to several doll play situations where competing adult and peer demands were presented to the child, did not show any significant differences between the two groups. These similarities remained constant when sex of the child and number of parents in the home were controlled for, and the

children's responses to the cross-pressure showed no correlation with parental attitudes toward child-rearing (on the authoritarian-democratic dimension). Contrary to our prediction there was even a slightly greater tendency for home than for center children to have the doll child disobey the parent. Maybe center children have been faced with peer-adult dilemmas more frequently than home children in real life, and so have been better able to evaluate the consequences of disobedience.

One is tempted to conclude that the above findings are a function of the age of the children, rather than anything else. Previous research (i.e., Bronfenbrenner, 1971) has focused on older children (12-13 years of age) and it is possible that our five-year-olds are simply not old enough to have developed the capacity to put themselves in the position of the doll and empathize with him/her in the dilemmas. Later phases of this study will continue to monitor the norm internalization issue.

The findings discussed above have been related to similar findings in other previous studies. It might be worth pointing out some of the things we did not find but which have been reported by other researchers: There have been reports that children in day care have been higher than children at home on various types of active rejection (Prescott, 1973), have shown a higher amount of negative interactions toward adults (Raph et al, 1964), and have been rated less cooperative with adults and more physically and verbally aggressive with peers and adults (i.e., Schwartz et al, 1974) than home-reared children. Our observational data coupled with our clinical experiences, based on hundreds of visits in day care centers and home settings, do not support these previous findings.

Conclusions.

Scientists have often been accused of not being able to formulate clean-cut answers to the kinds of questions asked by parents, teachers, politicians, etc. This has been particularly true in the area of child care. In an attempt to meet this criticism, we will try to summarize our discussion with the following statements based on the data from our study:

- (1) There are systematic differences in family characteristics among those families who use the day care center as a child care arrangement and those families who do not. Some of these differences have to do with the lack of space in public day care centers in Sweden. Others are related to the ability of a family, or group of families, to control their own lives (free versus forced choices).
- (2) Neither of the settings, the home or the day care center, has proven superior or inferior to the other in promoting the overall development of the children.
- (3) There are substantial differences between boys and girls in social interaction patterns, activities, and cognitive performances. These differences are more pronounced than any differences found among different child care environments.
- (4) The center children are not more peer- than adult-oriented in comparison with the home-reared children at age five, which supports

the notion that the day care center is to be seen as a complement rather than a substitute for the family.

- (5) Phase two of this study speaks only to the experiences and developmental outcomes during the first five years of the child's life. Long-lasting effects of these early experiences will have to be investigated when the children are older.

Limitations in the study.

Conducting research is a question of trying to make maximum use of available resources in terms of money, time, and manpower. In retrospect, there are always things one would have liked to do differently, questions that were never asked, and methodological shortcomings that have become all too evident during the course of the data collection period. Especially in a study like the present one, where the data collection period lasted for two years, new ideas kept coming up which, had they appeared earlier, would have affected the questions to be asked and the methods to be applied. Moreover, research in the area of child care has increased substantially over the past five years, contributing to our body of knowledge, but also raising certain issues that were less central when this study was planned.

In our view, the major limitation in this study is the absence of observations in the homes of the center children. Data on social interaction patterns in the home environments would have contributed to a fuller understanding of the center child's social experiences. Along the same lines, evening and/or weekend observations in both groups would have enabled us to describe and compare social experiences with fathers present. All we can say is, that this was a priority issue

which was discussed at some length at the start of phase two of the study, and that available resources did not permit this type of data to be collected, which is regrettable.

A second limitation, which also was the focus of our attention during the planning phase has to do with the absence of an activity sector. We have collected data on the social experiences of our children, but we lack systematic descriptions of the kind of things our children were doing, whether interacting with adults and peers or not. Our clinical impressions from two years "out in the field" coupled with descriptive key words in our observation protocols, have helped a lot in this respect, but, nevertheless, a more systematic collection of these types of data (which would have required an additional observation instrument) would have been preferable.

A different problem, having to do with the use of an observation scale, is the interfering effect of the observer's presence. This "observer effect" was probably not much of a factor in the day care centers where the observers were well known by the caregivers and the children. But in the homes, where the presence of an observer is more obvious to parents and children, the characteristics of the daily routines and the behaviors of the persons in the settings might have changed because of this fact. We do feel, however, that this has been somewhat less of a problem in phase two of this study than was the case in phase one, since we know all the families fairly well by now, because of continuous contacts over the past five years. We also made a special effort to reduce observer effects by scheduling observation sessions at the end of the data collection process, after the interviews and testings, and by always using as observer a person who had

been in the home at earlier visits, hence becoming more of a "familiar face".

A fourth limitation, which has become more and more evident during data collection and analyses, has to do with the fact that comparison by sex was not systematically designed into this study. In the discussion section we have spent a lot of time talking about observed differences between boys and girls in social interaction patterns, activities, and cognitive performances. We do feel that we lack a solid theoretical framework for these discussions. The literature on day care research simply does not deal with this issue, a fact that must be considered a major weakness. Because of our ignorance, our observation instrument did not allow us to collect information about sex of interactee, whether adult or peer, a limitation which could easily have been taken care of through the addition of two more code numbers, had we been more alert when developing the instrument. It is an objective fact, however, that there were no male caregivers around, neither in the homes nor in the centers so, from this point of view, our discussions around adult models rest on solid ground. With peers, on the other hand, we have to rely on our subjective impressions that boys and girls interacted with same-sex peers most of the time.

Bearing these limitations in mind, we still think that this study adds important information to the body of knowledge on the day care area, and also raises some important issues to be further investigated. This thesis ends with a presentation of two such studies currently underway.

Lines for future research.

Two studies, currently planned, speak directly to the issues raised by the first and the second phase of this study; the ongoing third phase of the project and a study in Gothenburg which looks at the effects of male caregivers in the day care centers.

(A) Research Plan for Phase III of the Swedish Childrearing Study.

There are several reasons why Phase III represents a critical point in the evolution of this longitudinal effort. To begin with, we are returning to the children at a point when they are leaving the childrearing context (home and day care) and venturing into the world of formal education, a transition of major proportions. This fact provides us with an opportunity to explore the links of families with one of society's major institutions, the school. These linkages have significance for parents as well as children, and need to be understood in terms of their impact on all family members. Another factor which makes this part of the study important is that it comes at the point when all the children in the study have an experience outside the home in common for the first time, and so can be observed in the same extra-familial context.

The primary goals of Phase III, which is already underway, are to describe and compare how two groups of children with different childrearing backgrounds during the pre-school years adapt to the demands and expectancies of the primary school setting. We expect to learn how the development of these young children is affected by an educational milieu which is quite unlike either the home or day care settings experienced previously.

Questions Guiding Phase III1. Transition into the School Setting.

- Is it easier for the day care child, who has become accustomed over a number of years to a large group of same age peers, to adjust to the primary school situation than it is for a home child who perhaps hasn't had much access to a large peer group?
- Does the expectation that the first-grade teacher will be similar to adults in the day care center make it more difficult for day care children to adjust to the more structured curriculum of the first-grade classroom?
- Do girls, who have been more closely involved with adults during the earlier years, find it easier to adjust to the expectations of the teachers than boys?
- What role is played by the quality of the relationship between the school and the home in the adjustment of the child to the demands of the first-grade classroom?

2. The Development of Social Skills.

- Are day care children, because of their long-term involvement with the peer group, more receptive to the demands of peers than home children?
- Do day care children, again because of their peer group experience, function better than home children in situations which require cooperation?
- Are home children, generally speaking, more receptive to the demands of adults than day care children?

- Do girls find it easier than boys to make contact with and cooperate with the teacher?
- Have boys, and especially those with day care experiences, developed more sophisticated leadership skills than girls?

3. The Acquisition of Social Norms and Values.

- Are day care children, and especially boys, more influenced by the expectancies of the peer group than home children?
- Are girls more influenced than boys by the expectancies of adults?

4. Self Esteem.

- Do day care children have a more positive picture of themselves than home children?
- Does the greater amount of contact with same sex adults lead to more positive self-esteem in girls than in boys?

5. Sex Role Development.

- Are day care children less traditional than home children in their assignment of roles to men and women?
- Are girls less traditional than boys in their assignment of occupational roles to men and women?

Although they have stemmed in part from the results of the first follow-up (Phase II), the questions listed above should nevertheless be thought of more as guideposts for our inquiry than as hypotheses which delimit the boundaries of our scientific interests.

(B) The Impact of male caregivers on the social interaction patterns of children in public day care center.

A second study, which speaks directly to some of the issues raised in the discussions of our phase two findings is currently being planned in Gothenburg. Social interaction patterns of five- to seven-year-old children in day care centers, which have male staff members (and there are a few!) will be compared with those of children in centers with only female caregivers, in an attempt to test hypotheses generated by the findings in phase two of this study. Not only child behaviors will be analyzed; possible sex-related differences in caregiver behaviors will also be investigated through direct observations and through extensive interviews with male and female staff members. This study will be an important contribution to the understanding of the socialization process as it relates to the development of sex role differences.

APPENDIX 1

MANUAL FOR SOCIAL INTERACTION SCALE

SOCIAL INTERACTION SCALE: SWEDISH CHILDBREARING PROJECT

<u>Activity Type</u>	<u>Definition</u>	<u>Examples</u>
Attention Seeking 1		
11 <u>Seeks Attention-Positive</u>	Moves toward and stands or sits near A or P. Touches, calls to, or begins interaction with A or P by telling or showing something.	S. touches A's clothing in order to make A aware of his presence. S. calls out "Teacher!" S. attempts to start a conversation with A or P when A or P is doing something else.
	<u>Qualification:</u> Seeking physical comfort or contact should be scored under 22, "Uses A or P as Emotional Resource".	
12 <u>Seeks Attention-Negative</u>	Child attempts to gain the attention of A or P through silliness, exaggerated actions or misbehavior.	S. shows off with the specific purpose of drawing attention to self. S. makes loud noises, pounds on table, etc. with specific purpose of attracting attention.

Qualification: Score only if bid for attention (11 or 12) is successful.

Use of Social Resources 2

21 Uses A or P as Resource-
Instrumental

Child makes use of an Adult or Peer in order to obtain something by means of a verbal request or demand or a physical demonstration of his need.

S. seeks explanation or information leading to action, like "When are we leaving?"
S. seeks A's judgment in peer dispute- "He won't let me have a turn with the bicycle!"
S. seeks help with clothing at recess time or end of day.
S. seeks help with equipment; asks A or P how to use something, to set up a new activity, to fix something, etc.
S. seeks food.
S. asks permission.
S. asks for guidance-"What should I do now?"

Qualifications: Merely accepting help initiated by another is not scored 21, but is more apt to be 41, "Compliance", or 43, "Follows lead of..."

21 always leads to action; it is a means for the child, rather than an end.

22 Uses A or P as Resource -
Emotional

Reflects child's emotional dependency on adult or peer. May be verbal or physical.

S. seeks physical affection or proximity, hangs onto A or P, follows A or P around.
S. seeks comfort, reassurance, support or affection after hurt or disappointment.

S. exhibits helplessness in situation where he clearly could do it himself but is afraid or lacks confidence.

Qualification: Seeking praise or evaluation not included under 22. See 25 and 26.

23 Information Gathering

Child is gaining information either verbally or visually as an end in itself. Curiosity fulfilling.

S. engages in conversation with A or P about past, present or future events. "What kind of bug is that?"

Qualification: 23 usually involves less active (more passive) use of social resources than 21 or 22.
23 is an activity seen by the child as an end in itself.

24 Information Giving

Child engaged in informing, explaining, or demonstrating something to A or P.

S. shows P how to use a piece of equipment.
S. teaches P letters, numbers, etc.
S. tells teacher what he did on his summer vacation.

Qualification: Care should be taken to distinguish between this item (24) and items 31 (Leading/Controlling-Positive) and 81 (Cooperation).

25 Evaluation of Product

Child seeks praise for or evaluation of something she has created, or praises/compares own or another's creation. May be positive or negative.

S. is drawing a horse. S says to A, "The legs should be longer".

S. says, "My train is longer than your's."

26 Evaluation of Attribute

Child seeks praise/evaluation of self for a personal quality or possession, or praises/compares self or another for a personal quality or possession.

S says, "Look at my new dress!"

S says, "You're taller than I am."

27 Boasting or Bragging

Any attempts by the child to convince others that she or someone else is superior in some way to A or P.

"My picture is prettier than your's is!"
"My daddy is stronger than you's!"

Leading and Controlling 3

31 Leading or Controlling-
Positive or Neutral

Child attempts to influence or control the behavior of A or P in a socially acceptable way, either with positive or without any emotional overtone.

Subject says to P., "Come and play with me."
"Why don't you sit next to me."
"Close the door."
"Give him back his truck!"
"Finish your juice."
S grabs a blanket and runs around pretending to be Superman (saying nothing)
P says, "I'll be Superman too." and follows his example.

Qualifications: Demands for the purpose of using A or P as a resource (e.g., "Get me a cookie".) are scored 21 (social resource-instrumental) rather than 31.

Serving as a model for others, when not directed to do so, is scored under this item (31).

32 Leading and Controlling-
Negative.

Child attempts to influence or control in a socially unacceptable or hostile way.

"Give me that ball, or else I'll hit you!"
"Get off my blanket!!!"
S snatches book from P.
"Give me that!"

Compliance/Following 4

41 Compliance

Child readily complies with the explicit rules, verbal directives and routine requests of A or P.

A says, "Sand is not for throwing, Lasse." L down handful of sand.
A says, "Please get me a towel." S runs to get towel.
P says, "let me have that stick." S gives the stick to her.

Qualification: 41 may be either a verbal or a non-verbal response.

The compliant act need only approximate the request or demand of A or P.

42 Non-Compliance

Child refuses to comply with A's or P's explicit rules, verbal directives or routine requests.

A says, "Time to go home now." S complains and resists.
A says, "It's time for supper." S continues to read her book.

43 Follows Lead of A or P w/o Verbal Instruction

Child voluntarily follows A or P, or joins an activity with A or P, or supports the position of A or P.

P says, "I'm going in now." S hesitates, then follows P inside.
P is building a block house. S joins him in the activity.
P1 says, "Let's go now."
P2 says, "No, not yet." S says, "Yes, it's time to go."

Qualification: Statements like "Sit next to me." might be double scored both 51 and 31 (controlling, positive).

52 Affect - Negative

Child expresses hostility to A or P.
May be verbal or physical.

S. expresses momentary or long-standing dislike of A
P. e.g., "I hate you."
S hits, throws, grabs or spits at A or P.
S physically disrupts P's activities.
S rejects or actively withdraws from P's attempt to show physical affection after a disappointment or mishap.

Qualification: 52 is distinguished from 42 (Non-compliance) by the level of emotion in the situation. 52 is always hostile, while 42 is generally much less so.

53 Shows Concern

Child shows awareness of another's feelings through interest, sympathy, empathy or concern.

S approaches crying P and offers him a turn on the bicycle.
S sees crying P, goes up to her, and says "What's the matter?"
S says, "You'd better move your fingers or they'll get pinched in the door."

Imitation and Role Play 6

61 Imitation

S observes and immediately repeats a specific verbal or physical action of A or P.

P says "Bang, bang." A later S says, "Bang, bang, bang."
P shakes her head in time with the music. S, watching P, begins to shake both hands and head.

Qualification: Slight modification of A's or P's behavior is also acceptable as imitation.

Constant monitoring of the model by S distinguishes this item from 62 (role playing). Imitation also usually involves much more discrete and isolated behavior than role playing, which may include a whole series of actions.

62 Role Play - Adult

Child plays the role of an adult by dressing up, play acting or expressing a desire to grow up.

S puts on high heels and a woman's dress. She turns to P and says, "Go make your bed and then we will go to the store."

63 Role Play - Child

S plays the role of a young child or expresses a desire to remain a child.

S and P, in the doll corner, are playing mother and child. S allows himself to be wheeled around in the baby carriage. S. refers to himself as "too little to do something." P says, "I'm a big ape." S says, "I'm a little monkey and I'm scared."

Qualification: Behavior coded as 62 or 63 is often quite non-specific in nature; that is, the playing of a generalized role far removed in time from any specific acts on the part of the model and often a mixture of several models.

Conflict/Competition 7

71 Conflict with Peer for
Adult's Attention

Child and Peer are simultaneously struggling to attract the Adult's attention.

P engaged in a conversation with A, S comes up and interrupts.

A says, "What shall we do now?"

S and P shout different things.

A selects P's idea.

Qualification: To be scored 71 (conflict) the subject must have adult's attention as his primary goal, rather than beating the peer. If position vis peer is central, score activity as 73 (competes with peer).

This activity may often be double scored with 11 (seeks attention), 31 (controls, and 21 (use of social resource)).

72 Conflict with Peer for
Equipment

Child engaged in overt struggle with another for use of equipment. May be verbal, physical or both.

Two children run toward the same swing. They both pull at the swing, and S wins the struggle; begins to swing.

S says, "I want to use that crayon.

P says, "No, I need that one." S grabs the crayon.

73 Competes with Peer

Child is clearly in competition with peer for the sake of showing superiority over peer, when object of competition is secondary.

P says, "I can beat you to the car."

S says, "No, you can't. and they race.

A says, "The first one finished cleaning up can have an extra cookie." S and P quickly complete clean-up and run to her saying, "I finished first!"

81 Cooperation with
A or P

Child is actively engaged in the use of reciprocity based activities in social interactions with others.

S notices P struggling to lift a box and says, "Can I help you?" They carry the box together.

S says, "We can all use the big blocks together".

They do.

"This time I'll be the cowboy and you be the indian."

They run off around the corner.

"You can have this (men's) hat if you let me be the mother."

"Let's line up to use the slide." The children form a line.

"We can clean out the hamster cage together."

"You can have the red checkers and I'll take the black ones."

Qualification: Cooperation activities are never scored successful or unsuccessful. If success is an issue (usually because the suggestion by S is not accepted by Ps), then double score with 31 (controls) and score that item "successful" or "unsuccessful".

Any attempt to cooperate (81) by the Subject always has a strategy associated with it. The alternative strategies are listed below, along with examples of each. One or more strategies should be recorded by the observer in connection with each cooperation item.

<u>Strategy</u>	<u>Description</u>	<u>Examples</u>
<u>Helps</u>	Child indicates cooperation by helping another child or adult spontaneously. Must be spontaneous act.	S offers to help P clean up a "mess".
<u>Shares</u>	Child suggests or otherwise initiates the sharing of his own resources or the resources of others. Suggestion or act must be spontaneous.	"Everyone can have some of my candy." "We can all sit on the blanket."
<u>Trades</u>	Child suggests or otherwise initiates a reciprocal exchange of materials, position (change sides) or roles.	"Now you use the truck and I'll use the airplane." "Now can I be inside and you be outside?"
<u>Trade offs</u>	Child suggests or initiates a "give something to get something" social arrangement. Often double scored with 31 (controls).	"I'll give you the truck if you will be the policeman." "I'll help you with the box if you help me with cleaning up."
<u>Takes Turns</u>	Child suggests or initiates taking turns or waiting ones turn. Resource is passed from person to person, with no compensation for waiting.	"After you, can it be my turn to hold the rabbit?" "First, I'll be the leader, and then you be the leader, OK?"

<u>Strategy</u>	<u>Description</u>	<u>Examples</u>
<u>Combining Resources</u>	Child suggests or initiates joint use of material resources. Both parties contribute to a joint pool of materials or resources.	"We can put our paints together and both use them all right?" S has Lego and P has clay. "Let's put them together and both use them all."
<u>Joint Effort</u>	Child initiates or suggests joining forces to create an effect or accomplish a goal. "Doing it together".	"We can both life this together." "Let's all get together and be a train."
<u>Play or Game Suggestion</u>	Child generates an idea or suggests a form for social play. Merely suggesting materials ("Let's play with the blocks.") not counted because it includes no mention of the play's form.	"Let's make a city in the sand." "This will be a house and this mat will be our bed."
<u>Assigning Roles or Resources</u>	Child assigns roles, parts, "sides", teams or material resources in a role play or other game. Often follows a "Play Suggestion" strategy.	"You be the father and I'll be the mother and you be the baby." "You bring the water and I'll get the bowls for the 'soup'."
<u>Rule Stating</u>	Child either appeals to the rules or states the rules of a game.	"In this game the person with the red marbles always get the red space." "We have to clean this up before we have juice."

APPENDIX 2

SOCIAL INTERACTION SCALE - GROUPINGS OF SUBJECTS

Basic assumption: "The interaction patterns observed when watching a child in his natural setting are governed more by the immediate nature of the setting experience than whether the child has been attending the setting for two years or for four years. We assume that children who have moved into the center will show interaction patterns more similar to the children in our 'pure center' group than to our home group children and that those children who have moved from the centers back into the homes will be more similar to the home group than to the center group." The table on the following page shows seconds per activity type (per child means) for the four groups at issue:

Based on the figures in the table, which confirms our basic assumption,¹ we will in our data analysis, include the "home to center"-children (15) in the center group for a total of 48 children, and the "center to home"- children (15) in the children.

¹ To test our basic assumption we first looked at the total number of interaction seconds (per child means), to find that the two groups of children observed in the centers ("center group" and "home to center group") were more similar to each other than to the two groups of children observed in the homes ("home group" and "center to home group"), which confirms our assumption. We then went on to rank order the activities within each group, creating interaction type profiles which were compared with each other. Again, the profiles of the children observed in the centers were more similar to each other than to the interaction type profiles of the children observed in the homes.

Types of Social Interactions by Child Care Experience
(All numbers are per child means in seconds.)

Activity Type	Center (33)	Home to Center (15)	Center to Home (15)	Home (35)
Attention seeking	39.2	54.0	56.0	31.2
Use of adult as social resource	43.2	56.0	66.0	59.2
Use of adult as emotional resource	24.0	12.0	3.6	12.0
Information sharing	282.0	375.6	295.6	266.4
Evaluation	5.2	10.8	8.0	8.0
Control: Positive and neutral	53.2	81.6	60.8	75.2
Control: Negative	5.2	6.0	0.8	4.0
Compliance	194.0	174.0	104.8	166.4
Non-compliance	35.6	27.6	27.6	27.6
Positive affect	12.0	17.2	18.8	36.4
Negative affect	11.2	26.4	35.2	22.0
Imitation	6.4	27.2	6.0	16.4
Role Play	71.6	68.0	34.0	56.8
Conflict	16.0	8.8	27.2	24.4
Cooperative behaviors	437.2	417.2	236.8	238.4
Total:	1236.0	1362.4	981.2	1044.4

APPENDIX 3

GRIFFITHS MENTAL DEVELOPMENT SCALE: YEARS V - VIII

Subscale A - LOCOMOTOR

Year V	1. Can run to kick a ball	2. Walks downstairs: one foot on each step, adult manner.
	3. Touches toes with knees straight.	4. Jumps a 6 in. high rope- both feet together.
	5. Can climb on and off a bus unaided.	6. Can <u>run</u> upstairs.
YEAR VI	1. Can bounce and catch a ball	2. Can run fast out of doors
	3. Can throw a ball up about 2 ft. and catch it.	4. Can hopskip 4+.
	5. Can jump off 3 steps.	6. Hopscotch I (one successful hop)
YEAR VII	1. Jump a 10 in. high rope, both feet together.	2. Hopskips more freely: 12+
	3. Hopscotch II (2 successful hops-second foot up).	4. Can run, with steady trot, all round playground.
	5. Can skip a little with a rope, 3+ skips.	6. Hopscotch III (3 hops-with second foot up).
YEAR VIII	1. <u>Runs</u> - downstairs.	2. Can jump off 4+ steps.
	3. Rides a bicycle (2-wheeler in garden short distance.	4. Hopscotch IV (4 hops-with second foot up).
	5. Fast single skipping with rope.	6. Skips well 12+ ordinary double skipping.
Extra items	7. Hopskips some distance-out-of-doors.	8. Rides a 2-wheeler with competence.

Subscale B - PERSONAL-SOCIAL

- | | | |
|-------------|--|---|
| YEAR V | 1. Washes own hands and face. | 2. Gives address(2) - house and street. |
| | 3. Uses knife and fork at table fairly well. | 4. Can dress and undress self- (not difficult fastening). |
| | 5. Can fasten shoe buckles. | 6. Manages top coat unaided. |
| ----- | | |
| YEAR VI | 1. Has <u>one</u> special playmate. | 2. Can tie single knot. |
| | 3. Can go alone on errands to nearby shops, etc. | (Credit as 2 items) |
| | 5. Can brush and comb own hair. | 6. Knows full address (3) (house, street, etc., and district) |
| ----- | | |
| YEAR VIII | 1. Can dress and undress without help completely. | 2. Has <u>one</u> special <u>school</u> . |
| | 3. Takes full responsibility for tidiness of hair. | (Credit as 2 items) |
| | 5. Knows birthday-day and months. | 6. Can lay a table-with supervision. |
| Extra items | 7. Can lay a table without help or supervision. | 8. Knows full date of birth (3), day, month, and year. |

Subscale C - HEARING AND SPEECH

- | | | |
|--------|--|---|
| YEAR V | 1. Defines by use: 6+ (as for item CIII, 3) | 2. Opposites - 2 (See page 11) |
| | 3. Materials (2+) "What is a <u>table</u> made of?.....
a <u>window</u> ?.....
a <u>house</u> ?..... | 4. Repeats sentences of 10+ syllables (See page 10) |
| | 5. Picture Description: 1+ sentences (See pg. 10). | 6. Names 12 objects in large picture. |

YEAR VI	1. Talks in sentences of 10+ syllables (Record).	2. Comprehension 4+, (See page 11)
	3. Uses 5+ descriptive words.	4. Knows 10+ Capital letters (Test).
	5. Uses 6+ personal pronouns.	6. Knows 10 colors (Test).

YEAR VII	1. Repeats sentence of 16 syllables (See page 10).	2. Picture Description - (3+) three sentences describing picture.
	3. Knows 20+ Capital letters. (Test)	4. Similarities - <u>one</u> (See page 11).
	5. Differences - <u>two</u> (See page 11).	6. Capital letters - knows all 26.

YEAR VIII	1. Picture Description - (4+), four sentences describing picture.	2. Similarities - <u>two</u> (See page 11).
	3. Comprehension - <u>six</u> (See list on page 11).	4. Differences - <u>three</u> (See page 11).
	5. Similarities - <u>three</u> . (See page 11).	6. Opposites - <u>three</u> (See page 11).
Extra items	7. Differences - <u>four</u> (See page 11).	(Credit as 2 items)

Subscale D - EYE AND HAND COORDINATION

YEAR V	1. Copies a cross-good shape and well drawn. Stage II.	2. Copies circle-good shape-neatly closed. Stage II.
	3. Draws a square-recognizable. Stage I.	4. Window-recognizable. Stage I.
	5. House. Stage I (See standards)	6. Scissors: Can strip edge of paper neatly.

YEAR VI	1. Threads 12 beads to color pattern.	2. Triangle-fairly good. (Stage A).
	3. Draws man (Stage II) (See standards).	4. Makes 3+ letters.
YEAR VII	5. Can write or print own first name.	6. Draws a house (Stage II) (See standards)
	1. Copies a square (Stage II) good shape and drawing.	2. Ladder (Stage II) (See standards).
YEAR VIII	3. Draws diamond (Stage A) recognizable.	4. Draws triangle-good shape-neatly drawn (Stage B)
	5. Can write figures to 9-correctly.	6. Can write full name.
Extra items	1. Makes 10+ letters.	2. Window (Stage II) (See standards)
	3. Draws a man (Stage III) (See standards)	4. Diamond-good shape-neatly drawn, etc.(Stage B)-(Credit as 2 items).
	6. Makes 24+ Letters.	
	7. House-very good. (Stage III) (See standards) Credit as 2 items.	

Subscale E - PERSONAL-SOCIAL

YEAR V	1. Six-hole board within 20 seconds.	2. Builds bridge-superior model.
	3. Pattern making No. 2 (60 seconds)(Time taken.....)	4. Builds gate to model.
	5. Pattern making No. 2 (40 seconds)	6. Pattern making No. 5 (60 seconds)(Time taken.....)

YEAR VI	1. Eleven-hole board- within 40 seconds.	2. Pattern making No. 5- within 40 seconds.
	3. Ten-brick Memory Stairs (imitation)	4. Pattern-making No. 3 - within 60 seconds.
	5. Returns 9 bricks to box and replaces lid in 20 seconds.	6. Pattern-making No. 4- within 60 seconds.
YEAR VII	1. Pattern-making No. 3- within 40 seconds.	2. Pattern-making No. 4- within 40 seconds.
	3. Four-square board- within 7 seconds.	4. Eleven-hole board- within 30 seconds.
	5. Pattern-making No. 2- in 20 seconds.	6. Pattern-making No. 3- in 30 seconds.
YEAR VIII	1. Pattern-making No. 4- within 30 seconds.	2. Six-hole board- within 10 seconds.
	3. Pattern-making No. 5- within 20 seconds.	4. Returns 9 bricks to box + lid - within 15 seconds
	5. Pattern-making No. 2- within 15 seconds.	6. Pattern-making No. 3- within 20 seconds.
Extra items	7. Pattern-making No. 4- within 20 seconds.	8. Pattern-making No. 5- within 15 seconds.

Subscale F - PRACTICAL REASONING

YEAR V	1. Knows 2 coins.	2. Can count 10 bricks.
	3. Knows morning and afternoon.	4. Knows 3 coins.
	5. "Which goes faster?" 3+.	6. Can count 15 bricks.
YEAR VI	1. Knows No. of fingers on <u>each</u> hand.	2. Knows 4 coins.
	3. Knows 5 coins.	4. Repeats 5 digits - 61384; 59271; 92786.
	5. Knows fingers on both hands (5+5=10).	6. Knows "high" and "low".

YEAR VII

1. Counts to 30.

2. Knows "right" and "left".
(8+)

1. right hand 5. left hand

2. left ear 6. right ear

3. right foot 7. left foot

4. right eye 8. left eye.

3. Can count backwards from
10.4. Can say the days of the
week.

5. Tells the time-hours only.

6. Knows "long" and "short".

YEAR VIII

1. Days of the week:

questions (2+)

"What day comes after
Tuesday?""What day comes before
Saturday?"

2. Knows 6 coins.

3. Says three digits back-
wards: 186, 725, 493.4. Knows "heavy" and
"light".5. Can count backwards from
20.

6. Knows 7 coins.

Extra
items7. Tells the time-half hours
(from clock face test)8. Tells the time-quarter
hours.

APPENDIX 4

INTRODUCTORY HOME VISIT

Background Information

(Code No.) _____
(Name) _____

Birth date: _____ Date when 5 yr., 4 mo.: _____

Child Care Arrangement: _____
(earlier) _____ (now)

Other child care arrangements during 4-year period: _____

Comments: (feelings about the different arrangements) _____

Siblings: Total: _____
Birth dates: _____
Sexes: _____

History of illnesses: _____

Address: _____
(previously) _____ (now)

Total number of moves: _____

Comments: (uncertainties, feelings, etc.) _____

Parent Information:

Number of parents in home: _____

Name: (M): _____ (F): _____

Age: (M): _____ (F): _____

Amount of school completed: (M): _____ (F): _____

Type of employment: (M): _____ (F): _____

Comments (on adults' situation): _____

Summary of matching information:

Date of visit: _____

Interviewer: _____

Parent(s) interviewed: (M): _____ (F): _____ (Both): _____

(Code Number)

Parents' ages: (M): _____

(F): _____

Parents' occupations: (M): _____

(F):

Number of siblings: _____

Sexes: _____

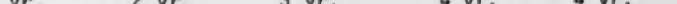
Ages: _____

Dwelling type: Apartment/city

Apartment/suburb

House/rowhouse

Child Care Arrangement: _____ (1970-71) _____ (present)

Age 

H = Home

D = Day care center

(Place H or D to indicate arrangement for each quarter of each year.)

Code No. _____

Information about Home Environment

Address: _____

Description of Living Space:

House: _____ Rowhouse: _____ Apartment: _____

(How many floors up? _____)

Number of stories in building: _____ In dwelling: _____

Number of rooms: _____ Bathroom: _____ Balcony: _____

Surrounding area:

lightly peopled / / / / / / / / heavily peopled

Street:

lightly traveled / / / / / / / / heavily traveled

Child's space:

Is there a separate play area for child? _____ Separate room? _____

Are toys allowed throughout the home? _____

Does child have own room? _____

Share room with sibling? _____

Share room with parents? _____

Total number of family members living at home: _____

Daily Routine Questionnaire

Code

A. Typical weekday

[illegible]

APPENDIX 5

Social Network (child)

Code No. _____

Family: Number of parents: _____ Number of siblings: _____

Friends: Total number: _____
Frequency of contact: _____
Sources (school, camp, neighbors, etc.) _____

Comments: (age, sex, relationship, etc.) _____

Other Adults: (relatives, acquaintances, other adults in different roles)

Total number: _____
Frequency: _____
Sources: _____

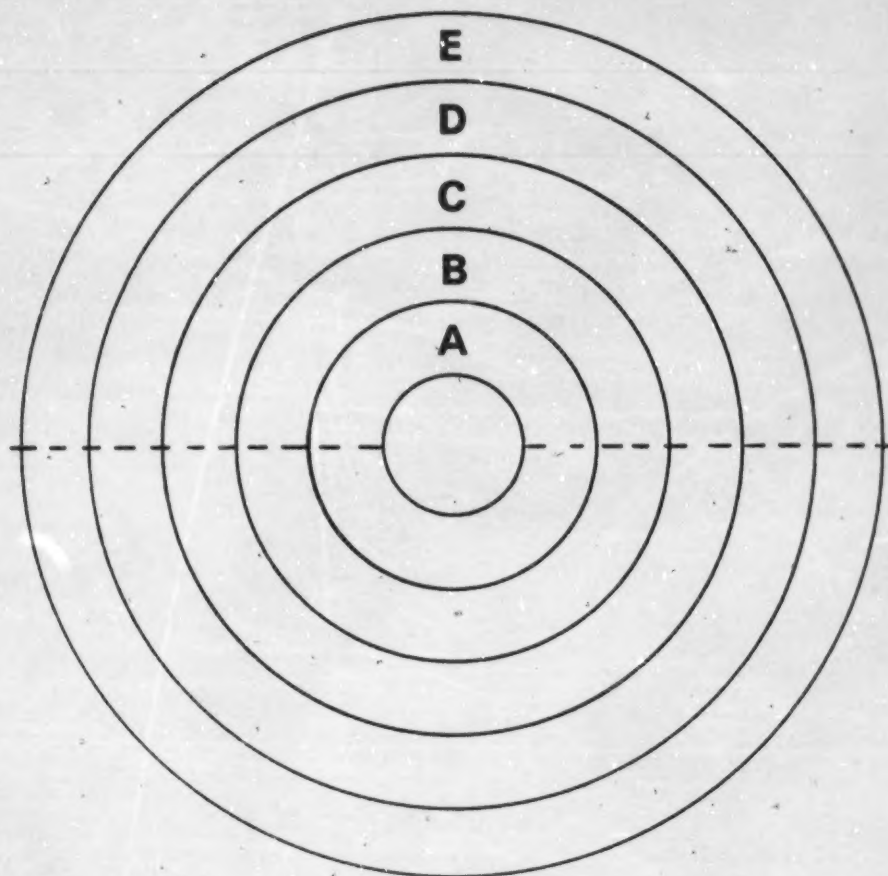
Comments: (activities associated with, etc.) _____

Date: _____

Signature: _____

Social Network

No. _____



UPPER HALF: ADULTS

LOWER HALF: CHILDREN

A: Nuclear Family

B: Relatives

C: Persons in neighborhood

D: Persons in child care setting

E: Persons outside of A-D

(1/2-time play-school included)

 = more than once a week.

 = once a week - more than once a month

 = once a month - more than once a quarter

APPENDIX 6

Parental Attitude Questionnaire

	completely agree	somewhat agree	somewhat disagree	strongly disagree
1. A child has a right to her own opinion and should be encouraged to express it.	/	/	/	/
2. Children should be encouraged to seek answers from other adults, even if those answers differ from those of the parents.	/	/	/	/
3. Parents should treat their children as equals.	/	/	/	/
4. Children should be encouraged to disagree with their parents if they think that their ideas are better than their parents.	/	/	/	/
5. When a parent asks her child to do something, she should always tell the child why.	/	/	/	/
6. When a child does something wrong, he should always know that he won't be punished, if he tells his parents about it.	/	/	/	/
7. A child should not question the opinions of her parents.	/	/	/	/
8. Parents should pay attention to the opinions of their children when making family decisions.	/	/	/	/
9. People outside the home should not encourage children to question whether the parents' ways of thinking and acting are the best.	/	/	/	/

completely somewhat somewhat strongly
agree agree disagree disagree

10. Parents should be guided by their children sometimes, and not feel that the children should always be guided by them.

/ / / /

11. Children have every right to question the opinions of their parents.

/ / / /

12. One should teach the child that there are many people who she can come to like and respect as much or more than her parents.

/ / / /

13. If a parent is wrong, he should admit so to his child.

/ / / /

14. Most children learn quickly that their parents are not always right.

/ / / /

15. When children think that their parents are wrong, they should say so.

/ / / /

16. Children should be encouraged to tell their parents if they think that the family rules are too strict.

/ / / /

17. Children should be taught early to respect their parents.

/ / / /

18. If one pays attention to a child's every concern, then he will complain more and more.

/ / / /

19. When children and adults are together, one should pay as much attention to the children as to the adults.

/ / / /

- | | completely
agree | somewhat
agree | somewhat
disagree | strongly
disagree |
|--|---------------------|-------------------|----------------------|----------------------|
| 20. It is better that parents be a little too strict than too indulgent in their method of upbringing. | / | / | / | / |
| 21. Children should be a part of deciding what the family will do together. | / | / | / | / |
| 22. If children demand attention one should give it to them. | / | / | / | / |
| 23. Children should not get used to being praised all the time. | / | / | / | / |
| 24. When children are angry it is usually best to reason with them. | / | / | / | / |
| 25. All parents know that spanking helps. | / | / | / | / |
| 26. Children should learn to do things even if one doesn't tell them why. | / | / | / | / |
| 27. It is impossible for parents to have time to explain everything that a child wonders about. | / | / | / | / |
| 28. Children who have been raised strictly will thank their parents when they are adults. | / | / | / | / |

The following (in alphabetical order) are a list of personal characteristics:

Active
Aggressive
Competitive
Cooperative
Courageous

Creative
Determined
Lighthearted
Obedient
Self-reliant

Serious
Shy
Sociable
Spontaneous
Warm (affect)

Select the five characteristics that you most want your child to develop:

Now rank the five characteristics in the order of their importance to you:

(1 = most important; 2 = next most important, etc.)

At what age do you think that:

Age (years)

- | | |
|--|-----------|
| 1. ... parents should teach their children to reason before hitting? | 1. _____ |
| 2. ... children should be able to distinguish right and left? | 2. _____ |
| 3. ... parents should begin to teach children to wash themselves without help? | 3. _____ |
| 4. ... children should start to use a knife and fork at the table? | 4. _____ |
| 5. ... parents should begin to teach their children to share their playthings with friends? | 5. _____ |
| 6. ... children should be able to count to 30? | 6. _____ |
| 7. ... parents should begin to allow their children to cross heavily travelled streets without streetlights? | 7. _____ |
| 8. ... children should know their complete home address? | 8. _____ |
| 9. ... parents should teach their children not to mix fantasy with truth? | 9. _____ |
| 10. ... children should be able to wash their hands and faces without help? | 10. _____ |
| 11. ... parents should begin to teach their children not to use their fingers when they eat? | 11. _____ |
| 12. ... children should begin to know what "morning" and "afternoon" mean? | 12. _____ |
| 13. ... parents should begin to make their children understand what things that the children break cost? | 13. _____ |
| 14. ... children should know the names of the days of the week? | 14. _____ |
| 15. ... parents should begin to allow their children to do errands alone, like going to the store, etc.? | 15. _____ |

APPENDIX 7

Reliability Check -- Number One: Social Interaction Scale

Date: October 15, 1974

Setting: Day Care Center + videotaped home situation

This check was conducted at the end of the training session before data collection had started. In the center, the four observers (Eva, Kristina, Lennart, LG) formed pairs and each pair observed one five-year-old child for five minutes. In addition, a five-minute home situation was video-taped and three of the four observers coded simultaneously from the TV set. (The fourth observer, LG, did not participate in this coding, since he had been the one shooting the film, and knew what was going to happen on the screen.) Hence, the E-L, E-K, K-L scores are based on two five-minute periods (one in the center, and one videotaped).¹

<u>Pair</u>	<u>Frequency</u>	<u>Time</u>	<u>Activity</u>	<u>Technique</u>
E-L	.81	.81	.70	.60
E-K	.79	.78	.62	.55
K-L	.86	.78	.75	.65
E-LG	1.00	.93	.93	.80
L-LG	1.00	.98	.96	1.00
K-LG	1.00	.91	.86	.60
Mean: K	.91	.87	.80	.70

Reliability Check -- Number 2: Social Interaction Scale

Date: May 21, 1975

Setting: Preschool (5-6 years olds) Ingmari

This check was conducted when approximately half the number of families had been visited. The four observers (Eva, Kristina, Lennart, LG) formed pairs and each pair observed one five-year-old child for five minutes and then a different child for another five minutes. Percentage inter-observer agreement regarding frequency of interactions, total interaction time, activity, and techniques are shown below: (Activity codes 23 and 24 are grouped together "information sharing" and will be treated as one activity in data analysis).¹

<u>Pair</u>	<u>Frequency</u>	<u>Time</u>	<u>Activity</u>	<u>Technique</u>
LG-L	1.00	.90	.75	.90
K-E	.95	.84	.68	.62
LG-E	1.00	.88	.90	.90
K-L	1.00	.80	.82	.72
L-E	.86	.80	.90	.50
LG-K	.86	.73	.82	.82
Mean	.95	.83	.81	.74

¹ The formula used to calculate interobserver reliability was:

$$\frac{\text{Total \# of agreement}}{\text{Total \# of agreement} + \text{Total \# of disagreement}}$$

APPENDIX 8

RELIABILITY TEST

Griffiths Mental Development Scale

Test administered to boy, Göran Horneman, 5 1/2 years old.

By item percentages of agreement:

Sub-Scale A (<u>LOCOMOTOR</u>)	Sub-Scale B (<u>PERSONAL-SOCIAL</u>)	Sub-Scale C (<u>HEARING & SPEECH</u>)
E - L 1.00	E - L .96	E - L .96
E - K 1.00	E - K .94	E - K .94
L - K 1.00	L - K .96	L - K .98
Sub-Scale D (<u>EYE & HAND COORDINATION</u>)	Sub-Scale E (<u>PERFORMANCE</u>)	Sub-Scale F (<u>PRACTICAL REASONING</u>)
E - L .94	E - L .96	E - L .98
E - K .94	E - K .98	E - K .98
L - K 1.00	L - K .98	L - K .96
	<u>TOTAL:</u>	<u>TOTAL (CQ-Score)</u>
	E - L .97	E: 126
	E - K .96	K: 127
	L - K .98	L: 126

E: Eva

K: Kristina

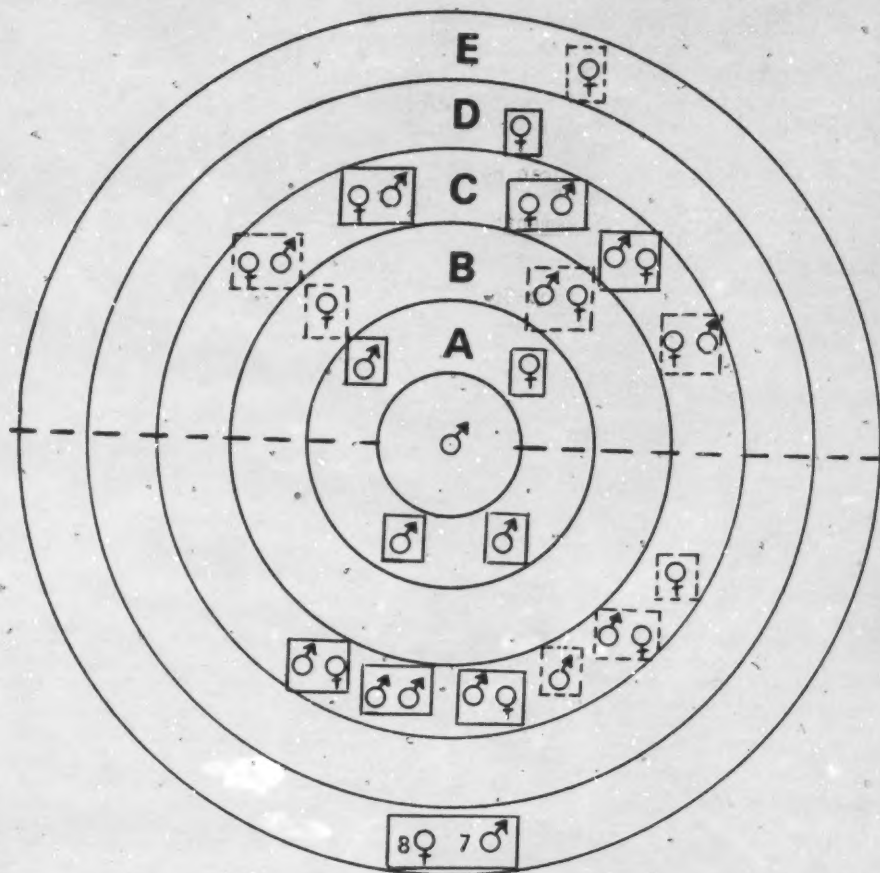
L: Lennart

APPENDIX 9
SOCIAL NETWORK

HF-Case

024

No.



UPPER HALF: ADULTS

LOWER HALF: CHILDREN

Frequency of contacts

- A: Nuclear Family
- B: Relatives
- C: Persons in neighborhood
- D: Persons in child care setting
- E: Persons outside of A-D
(1/2-time play-school included)

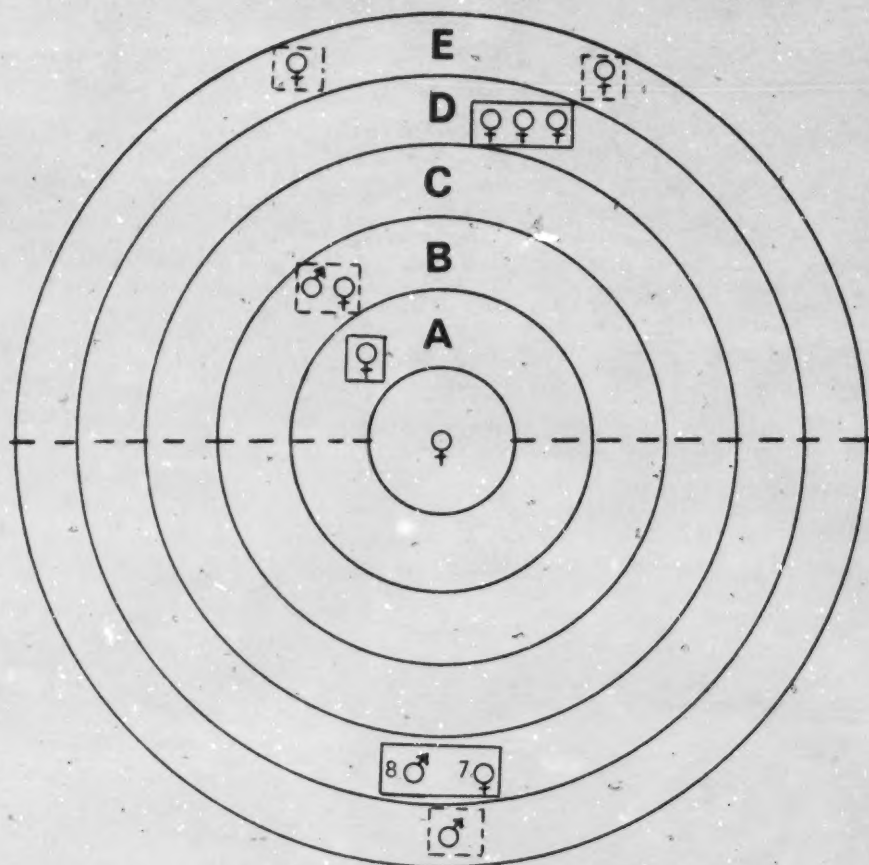
- = more than once a week
- = once a week - more than once a month
- = once a month - more than once a quarter

SOCIAL NETWORK

LF-Case

045

No.



UPPER HALF: ADULTS

LOWER HALF: CHILDREN

Frequency of contacts

- A: Nuclear Family
 B: Relatives
 C: Persons in neighborhood
 D: Persons in child care setting
 E: Persons outside of A-D
 (1/2-time play-school included)

♂ ♀ = more than once a week

♂ ♀ = once a week - more than once a month

♂ ♀ = once a month - more than once a quarter

APPENDIX 10

Children's Responses to Doll Play Dilemmas. Boys vs. Girls.

1.
(Scissors)

	Breaks adult rule	Does not break adult rule	No response
Boys	21	18	0
Girls	16	8	5 (N:39) (N:29)

χ^2 : N.S.

2.
(Apple-tree)

	Breaks adult rule	Does not break adult rule	No response
Boys	25	14	0
Girls	13	11	5

χ^2 : N.S.

3.
(Fence)

	Does not follow adult	Follows adult	No response
Boys	14	25	0
Girls	9	15	5

χ^2 : N.S.

4.
(Cookies)

	Does not follow adult	Follows adult	No response
Boys	21	18	0
Girls	12	12	5

χ^2 : N.S.

5.
(Play-house)

	Does not follow adult	Follows adult	No response
Boys	28	10	1
Girls	14	10	5

χ^2 : N.S.

6.
(Babysitter)

	Does not follow adult	Follows adult	No response
Boys	19	19	1
Girls	10	14	5

 χ^2 :N.S.Children's Responses to Doll Play Dilemmas. One vs. Two Parents.1.
(Scissors)

	Breaks adult rule	Does not break adult rule	No response
1 Parent	10	4	1
2 Parents	27	22	4

 χ^2 :N.S.2.
(Apple-Tree)

	Breaks adult rule	Does not break adult rule	No response
1 Parent	10	4	1
2 Parents	28	21	4

 χ^2 :N.S.3.
(Fence)

	Does not follow adult	Follows adult	No response
1 Parent	7	7	1
2 Parents	16	33	4

 χ^2 :N.S.4.
(Cookies)

	Does not follow adult	Follows adult	No response
1 Parent	5	9	1
2 Parents	28	21	4

 χ^2 :N.S.

5.
(Play-house)Does not
follow adultFollows
adult

No response

1 Parent

10

3

2

2 Parents

32

17

4

 χ^2 : N.S.6.
(Babysitter)Does not
follow adultFollows
adult

No response

1 Parent

7

6

2

2 Parents

22

27

4

 χ^2 : N.S.

APPENDIX 11

SELECTED ANALYSIS OF VARIANCE RESULTS

A. Griffiths - Mean Overall Scores (Table 15)

	DF	Sum of Sqrs.	Mean Sqr.	F-Stat.	Sign.
Between	2	536.0	268.0	2.430	0.091
Within	98	10807.0	110.2755		
Total	100	11343.0			

B. Griffiths - Mean Overall Scores by setting and sex (Table 16)

	DF	Sum of Sqrs.	Mean Sqr.	F-Stat.	Sign.
Between	5	1643.0	328.5999	3.218	0.010
Within	95	9700.0	102.1053		
Total	100	11343.0			

C. Griffiths - Locomotor Subscale (Table 16)

	DF	Sum of Sqrs.	Mean Sqr.	F-Stat.	Sign.
Between	5	391.0	78.2	0.461	0.679
Within	95	16102.0	169.4947		
Total	100	16493.0			

D. Griffiths - Personal-Social Subscale (Table 16)

	DF	Sum of Sqrs.	Mean Sqr.	F-Stat.	Sign.
Between	5	4498.0	899.5999	4.408	0.001
Within	95	19386.0	204.0632		
Total	100	23884.0			

E. Griffiths - Hearing & Speech Subscale (Table 16)

	DF	Sum of Sqrs.	Mean Sqr.	F-Stat.	Sign.
Between	5	2369.0	473.7998	2.271	0.053
Within	95	19823.0	208.6631		
Total	100	22192.0			

F. Griffiths - Eye & Hand Coordination Subscale (Table 16)

	DF	Sum of Sqrs.	Mean Sqr.	F-Stat.	Sign.
Between	5	3278.0	655.5999	4.492	0.001
Within	95	13865.0	145.9474		
Total	100	17143.0			

G. Griffiths - Performance Subscale (Table 16)

	DF	Sum of Sqrs.	Mean Sqr.	F-Stat.	Sign.
Between	5	1010.0	202.0	0.681	0.629
Within	95	28181.0	296.6421		
Total	100	29191.0			

H. Griffiths - Practical Reasoning Subscale (Table 16)

	DF	Sum of Sqrs.	Mean Sqr.	F-Stat.	Sign.
Between	5	2350.0	470.0	1.723	0.136
Within	95	25910.0	272.7368		
Total	100	28260.0			

Result of Analysis of Variance to test Differences in Interaction with
Adults (Table 8).

	SS	DF	MS	F	P less than
Within cells	4880095.00	94	51915.902		
Setting	55352.445	1	55352.445	1.066	0.304
Sex	216405.750	1	216405.750	4.168	0.044
Setting/Sex	20997.043	1	20997.043	0.404	0.526

Result of Analysis of Variance to test Differences in Interaction with
Peers (Table 8).

	SS	DF	MS	F	P less than
Within cells	16384083.0	94	174298.750		
Setting	2151657.00	1	2151657.00	12.345	0.001
Sex	572907.062	1	572907.062	3.287	0.073
Setting/Sex	883733.062	1	883733.062	5.070	0.027

Result of Analysis of Variance to test Differences in Interaction with
Adults (Table 9).

SIS-Category: Use of Adult as Social Resource

	SS	DF	MS	F	P less than
Within cells	408712.0	94	4348.0		
Setting	5568.5	1	5568.5	1.287	0.259
Sex	1398.6	1	1398.6	0.323	0.571
Setting/Sex	29131.8	1	29131.8	6.732	0.011

SIS-Category: Information sharing

	SS	DF	MS	F	P less than
Within cells	784702.6	94	8347.9		
Setting	35635.4	1	35635.5	4.271	0.042
Sex	141.4	1	141.4	0.017	0.897
Setting/Sex	1026.8	1	1026.8	0.123	0.727

SIS-Category: Compliance

	SS	DF	MS	F	P less than
Within cells	2175752.2	94	23146.254		
Setting	1.6	1	1.6	0.000	0.993
Sex	107087.4	1	107087.4	4.625	0.034
Setting/Sex	17614.3	1	17614.3	0.761	0.385

SIS-Category: Positive Affect

	SS	DF	MS	F	P less than
Within cells	476016.0	94	5064.0		
Setting	7672.4	1	7672.4	1.495	0.224
Sex	12611.5	1	12611.5	2.457	0.120
Setting/Sex	14685.7	1	14685.7	2.862	0.094

SIS-Category: Cooperative Behaviors

	SS	DF	MS	F	P less than
Within cells	912129.0	94	9703.5		
Setting	31974.3	1	31974.3	3.328	0.071
Sex	13424.6	1	13424.6	1.397	0.240
Setting/Sex	30080.8	1	30080.8	3.131	0.080

Result of Analysis of Variance to test Differences in Interactions with
Peers (Table 10).

SIS-Category: Information Sharing

	SS	DF	MS	F	P less than
Within cells	1749622.0	94	18613.0		
Setting	134801.7	1	134801.7	7.421	0.008
Sex	175091.1	1	175091.1	9.639	0.003
Setting/Sex	26058.2	1	26058.2	1.435	0.234

SIS-Category: Positive Control

	SS	DF	MS	F	P less than
Within cells	337554.0	94	3591.0		
Setting	466.9	1	466.9	0.127	0.722
Sex	2466.1	1	2466.1	0.673	0.414
Setting/Sex	718.2	1	718.2	0.196	0.659

SIS-Category: Compliance

	SS	DF	MS	F	P less than
Within cells	665623.4	94	7081.1		
Setting	39314.2	1	39314.2	5.552	0.021
Sex	1525.1	1	1525.1	0.215	0.644
Setting/Sex	7760.9	1	7760.9	1.096	0.298

SIS-Category: Imitation

	SS	DF	MS	F	P less than
Within cells	339067.4	94	3607.1		
Setting	45.2	1	45.2	0.013	0.911
Sex	8061.9	1	8061.9	2.234	0.138
Setting/Sex	4963.4	1	4963.4	1.376	0.244

SIS-Category: Role Play

	SS	DF	MS	F	P less than
Within cells	1604711.6	94	17071.4		
Setting	12411.6	1	12411.6	0.727	0.396
Sex	158853.0	1	158853.0	9.302	0.003
Setting/Sex	18761.5	1	18761.5	1.099	0.297

SIS-Category: Conflict

	SS	DF	MS	F	P less than
Within cells	214357.6	94	2280.4		
Setting	3269.4	1	3269.4	1.438	0.234
Sex	1980.7	1	1980.7	0.871	0.353
Setting/Sex	232.6	1	232.6	0.102	0.750

SIS-Category: Cooperative Behaviors

	SS	DF	MS	F	P less than
Within cells	8523957.6	94	90680.4		
Setting	602941.3	1	602941.3	6.650	0.011
Sex	291267.3	1	291267.3	3.213	0.076
Setting/Sex	151436.3	1	151436.3	1.670	0.199

Types of Social Interactions with Adults by Setting and Sex (average amount and percentage of interaction per child).

		CENTER		HOME	
		Boys	Girls	Boys	Girls
Attention seeking	secs	19.8	11.1	22.7	8.8
	%	7.6	2.9	6.3	2.1
Use of adult as social resource	secs	19.8	61.1	66.6	33.8
	%	7.6	15.8	18.4	7.9
Use of adult as emotional resource	secs	15.0	6.3	9.2	7.7
	%	5.8	1.6	2.5	1.8
Information sharing	secs	84.3	88.0	127.2	116.9
	%	32.5	22.7	35.1	27.3
Evaluation	secs	1.7	1.3	4.7	1.2
	%	0.7	0.3	1.3	0.3
Control: Positive and Neutral	secs	3.8	3.9	7.0	11.2
	%	1.5	1.0	1.9	2.6
Control: Negative	secs	1.0	0.4	0.7	0.0
	%	0.4	0.1	0.2	0.0
Compliance	secs	78.3	123.1	77.2	179.6
	%	30.2	31.7	21.3	42.0
Non-compliance	secs	15.7	12.4	16.4	7.7
	%	6.1	3.2	4.5	1.8
Positive affect	secs	2.1	2.8	6.4	59.6
	%	0.8	0.7	1.8	13.9
Negative affect	secs	1.7	0.2	3.4	1.2
	%	0.7	0.1	0.9	0.3
Imitation	secs	0.5	3.1	1.1	0.0
	%	0.2	0.8	0.3	0.0
Role play	secs	0.2	0.0	3.0	0.0
	%	0.1	0.0	0.8	0.0
Conflict	secs	0.0	0.0	0.0	0.0
	%	0.0	0.0	0.0	0.0
Cooperative behaviors	secs	15.2	74.1	16.5	0.0
	%	5.9	19.1	4.5	0.0

Types of Social Interaction with Peers by Setting Sex (average amount and percentage of interaction per child).

		CENTER		HOME	
		Boys	Girls	Boys	Girls
Attention seeking	secs	38.6	21.3	23.0	9.6
	%	3.4	2.7	3.6	1.4
Use of adult as social resource	secs	1.9	5.7	4.1	0.8
	%	0.2	0.7	0.7	0.1
Use of adult as emotional resource	secs	17.6	2.4	0.9	0.0
	%	1.5	0.3	0.1	0.0
Information sharing	secs	293.3	171.5	164.1	112.3
	%	25.8	21.7	26.0	16.2
Evaluation	secs	6.4	4.4	4.7	3.1
	%	0.6	0.6	0.7	0.4
Control: Positive and Neutral	secs	55.2	60.7	58.2	75.4
	%	4.9	7.7	9.2	10.9
Control: Negative	secs	5.7	4.3	3.1	0.8
	%	0.5	0.5	0.5	0.1
Compliance	secs	98.6	73.0	40.8	53.5
	%	8.7	9.2	6.4	7.7
Non-compliance	secs	28.3	12.2	14.3	10.8
	%	2.5	1.5	2.2	1.6
Positive affect	secs	14.3	8.7	10.5	11.9
	%	1.3	1.1	1.6	1.7
Negative affect	secs	24.8	7.8	26.2	15.0
	%	2.2	1.0	4.1	2.2
Imitation	secs	7.9	13.5	3.0	39.2
	%	0.7	1.7	0.5	5.7
Role play	secs	36.9	96.3	16.9	135.8
	%	3.2	12.2	2.7	19.6
Conflict	secs	17.4	10.7	28.6	15.4
	%	1.5	1.4	4.5	2.2
Cooperative behaviors	secs	491.0	298.5	231.9	208.5
	%	43.1	37.7	36.8	30.1

APPENDIX 12

Mean Overall Scores and Standard Deviations on the Griffiths Mental Development Scale for Center Children Distributed Across Sex and Number of Parents.

	One Parent		Two Parents	
	Boys(7)	Girls(5)	Boys(8)	Girls(13)
Mean	111.4	120.4	120.6	122.5
Std. Dev.	9.6	7.2	7.4	10.8

Result of t-Test Comparing Overall Scores on Griffiths Mental Development Scales for Center Boys with One vs. Two Parents.

	Mean	Std. Dev.	t-value	D.F.	Sign.
One Parent	111.4	9.6	-1.96	13	.10
Two Parents	120.6	7.4			

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